Study on
Strengthening Food Standards and The Certification System
in the Socialist Republic of Vietnam

Study Report

February 2006

Engineering and Consulting Firms Association, Japan
Overseas Merchandise Inspection Co., Ltd.
Study on Strengthening Food Standards and the Certification System in the Socialist Republic of Vietnam

Executive Summary

1. Introduction ........................................... 7
   1.1 Background and Objectives ....................... 7
   1.2 Scope of Work .................................... 11
   1.3 Study Area in Vietnam ............................ 12
   1.4 Study Schedule .................................. 12
   1.5 Study Team Participants ......................... 12

2. Overview of Vietnam ................................. 13

3. Present situation in the food and agricultural sector in Vietnam .......... 15
   3.1 Food sector in Vietnam ............................ 15
   3.2 Food products in Vietnam ......................... 16
   3.3 Some constraints on the food sector in Vietnam 17
   3.4 Food safety management system in Vietnam and related regulations and laws 18
   3.5 Food safety standards and organization .......... 19
   3.6 Accreditation and certification system food in Vietnam 21
   3.7 Agricultural systems in Vietnam ................. 23
   3.8 Constraints in agricultural sector in Vietnam 23
   3.9 Recent efforts in Vietnam ....................... 26
   3.10 Good Agricultural Practice (GAP) System in Vietnam 27

4. Food Standards and Certification Systems in Asian countries ............ 29
   < Case study 1: Thailand > ........................ 29
   4.1 Overview of present situation on food safety in Thailand 29
   4.2 Implementation of the GAP System in Thailand .... 32
   4.3 GMP and HACCP in Thailand ..................... 34
   4.4 Organic farming and the Standards System in Thailand ....... 35
   < Case study 1: Malaysia > ........................ 36
   4.5 Food safety systems and organization in Malaysia .......... 35
   4.6 GAP implementation in Malaysia .................. 36
   4.7 GMP and HACCP in Malaysia ...................... 37
   4.8 Organic system in Malaysia ...................... 38
## 5. Food Standards and Certification Systems in Europe and the USA

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Global Food Safety Initiative (GFSI)</td>
<td>41</td>
</tr>
<tr>
<td>5.2</td>
<td>British Retail Consortium (BRC) Global Standard – Food</td>
<td>42</td>
</tr>
<tr>
<td>5.3</td>
<td>Dutch HACCP</td>
<td>44</td>
</tr>
<tr>
<td>5.4</td>
<td>International Food Standard (IFS)</td>
<td>45</td>
</tr>
<tr>
<td>5.5</td>
<td>SQF2000 and SQF1000</td>
<td>46</td>
</tr>
<tr>
<td>5.6</td>
<td>EUREPGAP</td>
<td>47</td>
</tr>
</tbody>
</table>

## 6. Food Standards and the Certification System in Japan

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>JAS-Organic</td>
<td>49</td>
</tr>
<tr>
<td>6.2</td>
<td>Certification system of Specially Grown Agricultural Products</td>
<td>53</td>
</tr>
<tr>
<td>6.3</td>
<td>Prefectural brand products</td>
<td>56</td>
</tr>
<tr>
<td>6.4</td>
<td>GAP Guideline</td>
<td>58</td>
</tr>
<tr>
<td>6.5</td>
<td>Recent efforts in the private sector</td>
<td>59</td>
</tr>
</tbody>
</table>

## 7. Recommendation to improve food standards and the certification systems in Vietnam

### Project 1: Strengthening good agricultural practices (GAP) on food safety systems of fresh fruits and vegetables

### Project 2: Strengthening the accreditation capacity in the agricultural production certification system

### Project 3: Establishment of agricultural information system of food safety

## 8. Future candidate projects through technical cooperation

<table>
<thead>
<tr>
<th>Project</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>Strengthening good agricultural practices (GAP) on food safety systems of fresh fruits and vegetables</td>
</tr>
<tr>
<td>Project 2</td>
<td>Strengthening the accreditation capacity in the agricultural production certification system</td>
</tr>
<tr>
<td>Project 3</td>
<td>Establishment of agricultural information system of food safety</td>
</tr>
</tbody>
</table>

## Appendix

### Appendix 1: Schedule for field investigation
### Appendix 2: Major interviewees
### Appendix 3: Definitions in standards and certification
### Appendix 4: Candidate projects profile for technical cooperation

On strengthening food certification system in Vietnam
Appendix 5  References
Photo 1  Food markets in Hanoi
Photo 2  Food processing company in Hung yen
Photo 3  Farms in Da Lat

Japanese Summary
List of Tables

| Table 1-1 | Recent food safety related occurrences in Japan | 1          |
| Table 1-2 | Participants in the study team | 6          |
| Table 2-1 | Recent exports and imports in Vietnam | 8          |
| Table 3-1 | Number of food manufacturers by number of employees | 9          |
| Table 3-2 | Food accreditation and certification system in Vietnam | 16         |
| Table 4-1 | Number of certified bodies in national standards of COC/GAP/Organic | 26         |
| Table 5-1 | Level of definition | 39         |
| Table 5-2 | An example of the levels of accountability applicable to the storage of medicines | 39         |
| Table 6-1 | Scope of organic and specially grown agricultural products in Japan | 44         |
| Table 6-2 | Criteria on specially grown agricultural products | 47         |
| Table 8-1 | GAP of fruit crop production in Vietnam | 58         |
| Table 8-2 | Accreditation and certification system for food sector in Vietnam | 61         |
List of Figures

Figure 1-1  Necessary information for consumer to buy fresh vegetables ..................  2
Figure 1-2  General concept of food certification system .................................  4
Figure 3-1  High quality marks ........................................................................  10
Figure 3-2  Vietnam government Food management system ..............................  13
Figure 3-3  Vietnamese standard system ..........................................................  15
Figure 3-4  Problem analysis on agriculture sector in Vietnam .........................  19
Figure 4-1  Q-Mark logo sample for GAP and HACCP .....................................  23
Figure 4-2  Food safety management system in Thailand ...................................  25
Figure 4-3  GAP certification flow in Thailand ....................................................  27
Figure 4-4  Certification system of National Organic Standard in Thailand ..........  28
Figure 4-5  SALM certification procedure ..........................................................  32
Figure 5-1  BRC Food Certification Flow ..........................................................  35
Figure 6-1  JAS Organic Mark Sample ..............................................................  41
Figure 6-2  JAS Organic accreditation and certification system .........................  42
Figure 6-3  Statistical data on organic agriculture in 2004 ...............................  43
Figure 6-4  Certification flow of specially grown agricultural products ..............  46
Figure 6-5  Concept sample of prefectural brand products ...............................  48
Figure 6-6  Wagoen system ...............................................................................  50
Figure 7-1  Certification system in food chain in Japan .....................................  52
Figure 7-2  Relation map between food certification and credibility ..................  54
Figure 7-3  Concept of technical cooperation program ......................................  55
Figure 8-1  Organization chart of Plant Protection Department .........................  64
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>Accreditation Body</td>
</tr>
<tr>
<td>ACFS</td>
<td>National Bureau of Agricultural Commodity and Food Standards (THAILAND)</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
</tr>
<tr>
<td>ASEANGAP</td>
<td>ASEAN Good Agriculture Practice</td>
</tr>
<tr>
<td>AUSAID</td>
<td>Australian Agency for International Development</td>
</tr>
<tr>
<td>BRC</td>
<td>British Retail Consortium</td>
</tr>
<tr>
<td>BSE</td>
<td>Bovine Spongiform Encephalopathy</td>
</tr>
<tr>
<td>CAC</td>
<td>Codex Alimentarius Commission</td>
</tr>
<tr>
<td>CB</td>
<td>Certification Body</td>
</tr>
<tr>
<td>CIES</td>
<td>International Committee of Food Retail Chains</td>
</tr>
<tr>
<td>CoC</td>
<td>Code of Conduct</td>
</tr>
<tr>
<td>DEP</td>
<td>Department of Export Promotion (THAILAND)</td>
</tr>
<tr>
<td>DLD</td>
<td>Department of Livestock Development (THAILAND)</td>
</tr>
<tr>
<td>DMS</td>
<td>Department of Medical Science (THAILAND)</td>
</tr>
<tr>
<td>DOA</td>
<td>Department of Agriculture (VIETNAM) (THAILAND) (MALAYSIA)</td>
</tr>
<tr>
<td>DOF</td>
<td>Department of Fishery (THAILAND) (MALAYSIA)</td>
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<td>Department of Environment (MALAYSIA)</td>
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<td>Euro-Retailer Produce Association</td>
</tr>
<tr>
<td>EUREPGAP</td>
<td>EUREP-Good Agriculture Practice</td>
</tr>
<tr>
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<td>Food Administration (VIETNAM)</td>
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<tr>
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<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
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<td>Food and Drug Administration (THAILAND)</td>
</tr>
<tr>
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<td>Farmer Participatory Research</td>
</tr>
<tr>
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<td>GFSI</td>
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<td>GHP</td>
<td>Good Hygiene Practice</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Practice</td>
</tr>
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<td>HACCP</td>
<td>Hazard Analysis and Critical Control Point</td>
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<td>IEC</td>
<td>International Electromechanical Commission</td>
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<td>IFS</td>
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</tr>
<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>JAS</td>
<td>Japanese Agriculture Standard</td>
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<tr>
<td>JGAP</td>
<td>Japanese Good Agriculture Practice</td>
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</table>
Study Area

Major investigation locations

Other field work sites

Hanoi
Ho Chi Minh City
Da Lat

Hung Yen, NORTHERN KINHDO FOOD JOINT STOCK CO.

Bin Duong
HACCP/ISO22000 workshop

Tien Giang
SOFRI

Ho Chi Minh City

Major investigation locations

Other field work sites

Hanoi
Ho Chi Minh City
Da Lat

Hung Yen, NORTHERN KINHDO FOOD JOINT STOCK CO.

Bin Duong
HACCP/ISO22000 workshop

Tien Giang
SOFRI

Ho Chi Minh City
Executive Summary

Background and Objectives
For people worldwide, to live a social and healthy life, food is the most important product. Previously, people consumed only food grown in their own area with limited transportation requirements and minimal storage technologies. In contrast, now food consumption areas are far from production areas due to food globalization and the development of a social economy.

Worldwide, there are several food borne problems such as pesticide residues in food, Bovine Spongiform Encephalopathy (BSE) in beef, and Avian Influenza, in addition to false labeling in food. Such problems are not only technical problems but also social problems.

Consumers can usually see the appearance of food and and read food labels, for such information as country of origin, certification on safety and delivery date, when they buy food products in the market. Information on food labeling is most important for consumers to identify what they purchase, and the particular details on the label are controlled by laws and legislation to avoid misunderstanding of product information. Certification systems play an important role in guaranteeing food safety in that certification can assure food quality and safety.

Food certification system
A food certification system is the primary step in securing quality assurance in food. Such certification is the minimum requirement for the purchase of agricultural products and processed foods in order to meet standards set by governmental regulations or standards required by customers.

A certification system consists of both standardization of specifications and conformity assessment through providing authorization after product evaluation to comply with specifications. The three kinds of certification categories are (1) self certification, (2) second party certification and (3) third party certification.

We have a general concept of food certification system in the food chain from farmers to consumers. Farmers are second party certified with clients such as retailers or processors. Third party certification in the private sector is authorized by an accreditation body (AB). Also, a governmental authority provides certification as a
certification body (CB).

Food safety covers a wide area, from raw materials to processed foods in agricultural products, fishery products and livestock products. In this report, we focus primarily on food standards and certification systems for fruit and vegetables.

**Scope of Work**
This study will collect food related information and analyze data from the public and private sector. It will examine a scheme for the implementation of this project and recommend measures to realize this project to find the current situation and problems on food standards and certifications systems in Japan, Vietnam and other Asian countries. The study will formulate an appropriate technical cooperative project for human resource development in the food and agricultural sector in Vietnam.

**Vietnam food sector**
The manufacture and distribution of food adulteration is still common, especially in remote areas, and there are some kinds of both falsification of information and poor quality foods imported from other countries. In 1999, the Vietnamese government established the Food Administration (FA) under the Ministry of Health (MOH). The FA is responsible for the management of food safety in the domestic market.

In Vietnam, each ministry plays a part in the food safety activities of the government as shown in the following chart.
The Vietnam Accreditation Bureau of Ministry of Science and Technology (MOST) is generally responsible for the accreditation system, and it accredits certification bodies as third parties. In contrast, GMP and HACCP are directly certified by MOH or MOFI because of governmental regulations. There is no Vietnamese certification body for GAP, but USAID is now introducing the durian GAP project.

**Vietnamese agriculture sector**  
The increase in world food trade, the advent of Sanitary and Phytosanitary (SPS) Agreement under World Trade Organization (WTO), and the goal to become a WTO member nation has created a situation in which Vietnam aims to develop and improve its agricultural sector. Such changes are based on safety and quality assurance systems to meet international requirements to ensure strong presence in global markets.

While accomplishing such changes, Vietnamese agriculture has gained a number of achievements in many fields such as production development and improvement of farm income. Still, the agricultural sector has some constraints and limitations such as the following:
- Limited safety measures for agricultural chemicals
- Low awareness of products quality and sanitary standard control on farms
- Lack of post harvest technology for fruits and vegetables
Government sectors and private sectors have some efforts to solve the constraints and limitations.

- **Three less three more project by MARD**: The three less are less seed; less nitrogen fertilizer; and less pesticide, and the three more are high yield; high quality; and high profit.
- **Farmer training school by Hanoi Agricultural University**: Green vegetable production
- **Good Agricultural Practice (GAP) project in SOFRI**: The project aims to introduce EUROPAGAP to help dragon fruit growers in Binh Thuan and Tien Giang provinces.

**Food certification system in Thailand**

Ministry of Agriculture and Cooperatives (MOAC) of Thailand has a **Q Mark logo** for the certification of all agricultural commodities to secure safety in foods from agricultural input to the final productions under the inspection and certification of several practices programs: COC, GAP, GMP, GHP, Organic and HACCP.

The farm producers who pass the National Food Safety Program at every step of farm production procedure will get a **Q Mark certificate**. Such a certificate assures quality of their products to consumers.

At the present, GAP has placed more emphasis on food for export than food for domestic consumption. GAP has done so because of the many requirements and regulations on pesticide residue or antibiotics in vegetables, fruits, meat and fishery products before exporting to other countries.

**Food certification system in Malaysia**

The National Food Safety Plan has GAP, GMP, GHP and HACCP implementation programs for farmers and the agro-industry sector in Malaysia. In 2003, the Malaysian Agriculture Research and Development Institute (MARDI) implemented a National GAP program to improve the farm sector under a new farming system with a national good agricultural practice called SALM, an environmentally friendly way.

- **GAP (Good Agricultural Practice) (SALM)** by the Department of Agriculture (DOA)
- **Good Animal Husbandry Practice (SALT)** by the Department of Veterinary Services (DVS)
- GAP (Malaysian Aquaculture Farm Certification Scheme (SPLAM) by the Department of Fisheries (DOF)

**Food certification system in EU and USA**

Global Food Safety Initiative (GFSI) coordinated CIES-The Food Business Forum focus on monitor issues around food safety to ensure consumer protection and strengthen consumer confidence. GFSI’s main objective is to implement a scheme to benchmark food safety management standards worldwide because there are many certificates and suppliers with many customers may be audited numerous times at high cost and little added-benefit.

The five food manufacturing standards listed below have been benchmarked against GFSI Guidance Document. They have been found to be in compliance with the guidance criteria.

1) The BRC Global Standard – Food  
2) Dutch HACCP Codes  
3) EFSIS Standard  
4) International Food Standard (IFS)  
5) The SQF 2000 Code

**Food certification system in Japan**

Japan has food accreditation and certification systems controlled by the central government, prefectural governments and private sectors at each level as follows:
- Specially grown agricultural products: A certified product to be cultivated using less than 50% amount of chemical fertilizers and chemically synthesized pesticides in conventional methods.
- Prefecture brand products: Some local authorities are implementing stricter and more credible systems to show consumer high quality and safety products for increasing their competitiveness in the market.
- Japan GAP: Recently, some private sectors have established their own GAP system for farmer groups who produce agricultural products and serve supermarkets.

**Concept of technical cooperation program**

To strengthen the food certification system in Vietnam, a program of food quality assurance is proposed. The program components are the following:

1. Strengthen good agricultural practices
2. Strengthen accreditation capacity
3. Establish agricultural information


1. Introduction

1.1 Background and Objectives

a. Food safety and consumer anxiety

Food is the most important commodity for humanity, enabling us to take the first step to leading healthy, socially productive, and rewarding lives. In former times, people consumed only food grown in their own area with limited transportation and storage technologies. Nowadays, however, the distance between food consumption and the production area is increasing due to the globalization of food and development of social economy.

Sometimes, it is difficult for both consumers and producers to communicate with each other on food related problems. In Japan and many Asian countries, there are several food borne problems such as pesticide residues in food, Bovine Spongiform Encephalopathy (BSE) in beef, Avian Influenza, in addition to false labeling in food. They are not only technical problems but also social problems. (See Table 1-1)

Some consumers in Japan have anxieties about imported agricultural products and processed food, due to different regulations and production standards and procedures in other countries.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
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<tr>
<td>2002</td>
<td>January</td>
<td>False labeling of origins and grades of meat</td>
</tr>
<tr>
<td></td>
<td>May</td>
<td>Use of unlicensed food additives</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>Recall imported frozen spinach with over limit of pesticide residues</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>Use of unregistered agricultural chemicals</td>
</tr>
<tr>
<td>2003</td>
<td>April</td>
<td>Use of formalin by blowfish breeders</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>Enforcement of food safety law</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establishment of food safety commission</td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>Herpes virus in carps</td>
</tr>
<tr>
<td>2003</td>
<td>December</td>
<td>False labeling of expiration date of eggs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BSE in USA</td>
</tr>
<tr>
<td>2004</td>
<td>January</td>
<td>Avian-Flu in Asia</td>
</tr>
<tr>
<td>2004</td>
<td>July</td>
<td>False labeling of origins of imported vegetables</td>
</tr>
</tbody>
</table>
b. Information disparity and food labeling

Normally, it is difficult for consumers to see food production sites, so they are limited to appearances and labels when buying food products in the marketplace. In practice, information on food labels is most important for consumers to identify what they consume. The particular details in the labeling are controlled by laws and regulations to avoid misunderstanding of product information.

Figure 1-1 indicates necessary information for consumers when buying fresh vegetables. Interviews with consumers found that over 80% of those surveyed need the following information on food labels:
- Country of origin
- Certification on safety
- Delivery time

Another 60% needs to know crop variety, cultivation method and pesticide use.

A certification system plays an important role in guaranteeing food safety; it can assure quality and safety of food consumed.

**Figure 1-1 Necessary information for consumers to buy fresh vegetables**

Consciousness survey on production and distribution information of vegetables (August 2004)
c. Food certification system

The food certification system is a primary step to secure quality assurance in food. It is a minimum requirement to produce agricultural products and processed foods in accordance with a certain standard of governmental regulations or standards required by consumers.

A certification system consists of both standardization of specifications and conformity assessments by providing authorization after product evaluation for compliance with specifications. The three kinds of quality assurance systems are 1) product certification with laboratory accreditation, 2) management system certification and 3) personnel certification.

The certification system is divided into three categories according to certification level.

- **Self certification**
  Firstly, manufacturers must have their own safety inspections on products at every stage of their production procedure. Manufacturer safety inspections can guarantee safety in products before selling to consumers, so-called self-certification. Such certification is based on voluntary standards established by farmers or manufacturers, and the production process has to comply with governmental food related regulations and laws. In addition, the legal system must have force with sufficient punishments and penalties if there is non-compliance.

  It is, however, difficult for buyers to accept such compliance that is only with a manufacturer self-declaration. Some buyers need additional certification based on their own requirements.

- **Second party certification**
  This system is to certify the compliance with the contract between seller and buyer, such as Private Brand (PB) products in some supermarkets.

  This system is limited in the scope of certification between only one seller and one buyer, and the same seller cannot make the same certification contract with another new buyer.

- **Third party certification**
  This certification is a more fair and transparent system that is checked by authorized
independent persons or organizations. To assure this certification system in the food sector, it is important to improve and strengthen the following supporting systems:

- Legal system by government such as food standards, laws and regulations
- Management and Accreditation system by governmental agencies for food business operator, such as Good Agricultural Practice (GAP), Good Manufacturing Practice (GMP), Hazard Analysis and Critical Control Point (HACCP), etc.
- Assessment and monitoring system for products such as laboratory services
- Training and extension system for manufacturers on safety food production
- Information dissemination system for producers and consumers

Figure 1-2 shows the general concept of a food certification system on the food chain from farmers to consumers. Farmers are the second party certified with clients such as retailers or processors. In terms of third party certification, not only third party in the private sector but also governmental authority provides certification as a certification body (CB). Normally, a third party CB is accredited by the government or international accreditation body (AB) that is officially approved at the international level.

![Figure 1-2 General concept of food certification system](image-url)
Japan now has several food quality systems of assurance for certification, such as the Organic Production, Specially Grown Agricultural Products and Eco-farmer, and the recently introduced GAP. Together, these certification systems set guidelines to control agricultural products.

Some countries are considering implementing new certification systems such as GAP, GMP, and HACCP to secure food safety in both public and private sectors to comply with requirements from international and domestic markets.

In these situations, some farmers and food business operators in Asian countries including Vietnam, Thailand, Malaysia, etc. are applying appropriate certification systems to comply with international or imported country requirements:

- Codex standards as guideline
- Third party certification
- Governmental regulations of imported countries
- Buyer certification from the private sector

However, there are some constraints in the technical, institutional and human development aspects such as a lack of farmer awareness of product quality and safety, post-harvest loss of fruits and vegetables, and limited capacity for training and certification systems.

In terms of food safety, the range of areas concerned is very wide: from raw materials to processed foods in agricultural products, from fishery products to livestock products. In this report, we mainly focus on food standards and certification systems for fruits and vegetables.

1.2 Scope of Work

This study will collect and analyze data in the two items listed below, examine a scheme for implementation of this project, and recommend measures to realize this project.

- Find current situations and problems on food standards and certification systems in Japan, Vietnam and other Asian countries.
- Constraints on food chains from agricultural production to the market, in terms of government policy, certification systems, farmer awareness and guidance.
This study will formulate the appropriate technical cooperation project for human resource development on agricultural and food sector in Vietnam.

1.3 Study Area in Vietnam

The investigation was conducted mainly at two locations in Vietnam: Hanoi and Ho Chi Minh. These locations were selected in view of their activities and potential related to food safety policies, regulations and management in the public and private sectors.

In addition, exploratory investigations were conducted in Binh Duong, Tien Giang and Da Lat to observe a number of farms and provincial activities.

1.4 Study Schedule

Two field investigations were conducted in Vietnam and Thailand. The field investigation in Vietnam was conducted over a fourteen day period from September 18, 2005 to October 1, 2005 in the Hanoi and Ho Chi Minh areas.

The field investigation in Thailand was conducted from September 14 to September 18, 2005, and from October 2 to October 5, 2005 to gather necessary information on certification system.
(Refer to Appendix 1 for the schedule of the two investigations)

1.5 Study Team Participants

Table 1-2 shows study team participants who conducted the investigations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kazumi Ueno</td>
<td>Food Safety System</td>
</tr>
<tr>
<td>2</td>
<td>Chantaree Jarupanhu</td>
<td>Agricultural Products Certification System</td>
</tr>
<tr>
<td>3</td>
<td>Hirokazu Nagaoka</td>
<td>Human Resource Development</td>
</tr>
</tbody>
</table>
2. Overview of Vietnam

The Socialist Republic of Vietnam is located in Southeast Asia, bordered by the Gulf Tonkin and the South China Sea to the east, China to the north, Laos and Cambodia to the west, and the Gulf of Thailand to the south.

In 2004, the population of Vietnam was 82.0 million, and the population was growing at a rate of about 1.4 percent per year. The average population density was 249 people per square kilometer, one of the highest density levels in the world. The population, which had been primarily rural, has become increasingly urbanized since 1986 when the Doi Moi economic renewal program began to increase income and employment opportunities in the cities.

In 1986, the Doi Moi program introduced reforms intended to facilitate the transition from a centralized economy to a socialist-oriented market economy. The program combined government planning with free-market incentives. The program also abolished agricultural collectives, removed price controls on agricultural products, and enabled farmers to sell their products in the marketplace. The program encouraged the establishment of private businesses and foreign investments, including foreign owned enterprises.

In 2004, Vietnam GDP was US$44.9 billion. Per capita gross national income was US$547. In 2004, the contribution to GDP by sector was as follows: agriculture, 21.8 percent; industry, 19.8 percent; manufacturing, 20.3 percent; and services, 38.1 percent. However, agricultural employment was much higher than the agricultural share of GDP. In 2002, 66.1 percent of the employed labor force was engaged in agriculture, forestry, and fisheries. Rice is the staple crop, accounting for 4.3 percent of export earning in 2002. The relaxation of the state monopoly on rice exports transformed the country into the world’s second or third largest rice exporter. Other cash crops are coffee, cotton, peanuts, rubber, sugarcane, and tea.

Manufacturing contributed 20.3 percent of GDP in 2004, while employing 12.7 percent of workers. During 1990-2002, manufacturing GDP grew at an average annual rate of 10.9 percent. The top manufacturing sectors – food processing, cigarettes and tobacco, textiles, chemicals and electrical goods – experienced rapid growth.
In 2004, Vietnamese imports were valued at US$32.0 billion and growing rapidly. Vietnamese principal imports were machinery, instruments, and accessories (27.0 percent), fuel and materials (68.0 percent), and consumer goods (5.0 percent). The main countries for Vietnamese imports were China (13.9 percent), Singapore (11.3 percent), Japan (11.1 percent), South Korea (10.4 percent), Thailand (5.8 percent), the United States (3.5 percent) and Hong Kong (5.8 percent).

In 2004, Vietnamese exports were valued at US$26.5 billion, and much like imports, were growing rapidly. Vietnamese principal exports were light industrial and handicraft products (41.2 percent), heavy industrial products and minerals (32.6 percent), agricultural and forest products (17.1 percent), and aquatic products (9.1 percent). The main destinations of Vietnamese exports were the United States (18.8 percent), Japan (13.2 percent), China (10.3 percent), Australia (6.8 percent), Singapore (5.1 percent), Germany (4.0 percent) and the United Kingdom (3.8 percent).

Table 2-1  Recent Exports and Imports in Vietnam

<table>
<thead>
<tr>
<th></th>
<th>Exports</th>
<th>Imports</th>
<th>Total</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>14,482.7</td>
<td>15,636.5</td>
<td>30,119.2</td>
<td>-1,153.8</td>
</tr>
<tr>
<td>2001</td>
<td>15,029.2</td>
<td>16,217.9</td>
<td>31,247.1</td>
<td>-1,188.7</td>
</tr>
<tr>
<td>2002</td>
<td>16,706.1</td>
<td>19,745.6</td>
<td>36,451.7</td>
<td>-3,039.5</td>
</tr>
<tr>
<td>2003</td>
<td>20,149.3</td>
<td>25,255.8</td>
<td>45,405.1</td>
<td>-5,106.5</td>
</tr>
<tr>
<td>2004</td>
<td>26,504.2</td>
<td>31,953.9</td>
<td>58,458.1</td>
<td>-5,449.7</td>
</tr>
</tbody>
</table>

3. Present situation in the food and agricultural sector in Vietnam

3.1 Food sector in Vietnam

Vietnam has become one of the fastest growing food producing countries in Asia. The GDP growth rate of Vietnam economics averages around 8% in 1990-1997, and 6.5% in 1998-2003. In 2004, the GDP rate grew 7.7%, and agricultural production doubled. Now, Vietnam is the world’s second-largest exporter of rice. Besides rice, key export products are coffee, tea, rubber, cashew nuts, pepper, seafood and some meats, instant noodles, confectioneries, and fruit. However, the agricultural share of economic output has declined, as share of the GDP from 42% in 1989 to 16.6% in 2004. As production in other sectors of the economy has risen and decreased in the agricultural sector, another significant problem was the crisis of bird-flu outbreaks in the late part of 2003, continuing to 2005. Vietnamese exports of agricultural products in 2004 was a million USD 6,145 and aquatic products were the most valuable export product of about 45% of total agricultural export value. Following aquatic products was wooden products, and rice products were the third commodity.

Since 2001, the Vietnamese government has been implementing programs of industrialization and modernization in the agricultural sector to promote international economic integration. The agricultural sector has implemented a number of activities and has recorded some considerable achievements. Such achievements include ASEAN Cooperation (Association of South East Asian Nations) in the agricultural sector for market-opening provisioning. Vietnam is hoping to take the step of joining the World Trade Organization (WTO) during 2006.

In Vietnam, food products are small scale businesses with less than 50 employees. Small manufacturers are the majority (80%) of total food manufacturers.

Table 3-1 Number of food manufacturers by number of employees

<table>
<thead>
<tr>
<th>Year</th>
<th>Less than 5 per.</th>
<th>From 5 to 9</th>
<th>From 10 to 49</th>
<th>From 50 to 199</th>
<th>From 200 to 299</th>
<th>From 300 to 499</th>
<th>From 500 to 999</th>
<th>From 1000 to 4999</th>
<th>5000 and greater</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>603</td>
<td>1,140</td>
<td>1,135</td>
<td>379</td>
<td>81</td>
<td>100</td>
<td>93</td>
<td>61</td>
<td>3,592</td>
</tr>
<tr>
<td>2002</td>
<td>518</td>
<td>1,325</td>
<td>1,267</td>
<td>472</td>
<td>81</td>
<td>115</td>
<td>103</td>
<td>73</td>
<td>3,954</td>
</tr>
<tr>
<td>2003</td>
<td>498</td>
<td>1,269</td>
<td>1,419</td>
<td>515</td>
<td>90</td>
<td>130</td>
<td>122</td>
<td>71</td>
<td>4,114</td>
</tr>
</tbody>
</table>

Source: General Statistics Office \(\text{\textcopyright}2005\)

The Real Situation of Enterprises through the results of surveys conducted in 2002, 2003, 2004: Statistic publishing house

Manufacture of food product and beverages

Number of Employees Total number of enterprises
3.2 Food products in Vietnam

Vietnam has a high quality mark award to promote safe, high-quality food. The mark is organized by the HCMC Food and Foodstuff Association (FFA) and the Saigon Times Group. FFA is a non-governmental organization established under Decision No. 22/QD-UB-NC, issued by the Ho Chi Minh Committee in January 1998.

The award is based on four criteria: quality safety, creativeness-innovation, package labeling and socio-economic efficiency. All food producers who attended the Food & Drink Expo agreed with the standards established in the Vietnamese Standards (TCVN). (See Appendix 4)

In 2005, the Organization Committee chose quality and safety as the key criterion for 50 marks by adding the protection of consumers, which was highlighted as the goal of selection.

The Committee decided to expand the awards to all enterprises involved in the industry next year, instead of confining awards to those attending the Food & Drink Expo.

The logo on product packages is seen in supermarkets of the city. (See Figure 3-1)

The Food and Foodstuff Association HCMC has associate members of food as following categories

- **Confectionaries**: biscuits, cakes, cookies, candy, etc.
- **Agricultural products**: mango, tea, pepper, dragon fruit, durian, lichi, mushrooms, salt, mangosteens, longan, potatoes, taro, onions, ginger, rice, pickle turnips, water melons, pickle cucumbers, pineapples, peanuts, okra, beans, rambutan, coffee, eggplant, carrots, tomatoes, pomelo, cabbage, rice noodles, rice paper, etc.
- **Beverages and drinks**: yoghurt drinks, carbonated beverages, fruit juices, bottled drinking water, appetizing wine, non-carbonated beverages, etc.
- **Processed foodstuffs**: hot dogs, sausages, canned foods, powdered milk, instant noodles, hamburger, ham, chicken paste, crispy pork balls, fish balls, beef balls, smoked bacon, spring rolls, etc.
- **Sauces – spices**: spice powder, chili powder, curry powder, garlic sauce, tomato sauce, sesame sauce, shrimp paste, soya bean sauce, soy sauce, fish sauce, tofu, vanillin powder, citronella powder, cinnamon powder, turmeric powder, noodle soups, etc.
- **Fresh aquatic products**: octopus, shrimp chips, butter fish, fish fillet, eggplant with fish sauce,
vegetable spring rolls, raw shrimp paste, shrimp hacao, shao mai, whole tiger, rolled roasted dried squid, boiled shrimp balls, etc.

3.3 Some constraints on the food sector in Vietnam

According to a report of the Market Control Department, the situation of manufacture and distribution of food adulteration is still common, especially in remote areas. Some kinds of substandard quality foods are still imported from China, Laos, Cambodia, etc. without governmental control.

Safety and hygienic control of imported food is an important management issue, so the Nha Trand Pasteur Institute conducted a survey on the quality of imported foods in large markets in 1999 and 2000, and tested the biological and chemical safety of various food samples. Of food sampled, 21.7% did not meet biological criteria and 3.4% was out of the list of permitted food additives while 13% exceeded the accepted level of food additives regulated by the Ministry of Health.

According to statistical data of the Food Administration in the Ministry of Health, from 1997 to 2004, the main causative pathogens of food poisoning cases were cholera, typhoid, diarrhea, dysentery and others, with 9,055,398 cases, of which 398 were fatal. The main pathogens were biological pathogens (42.2%), chemical agents (24.9%) and natural toxins in food (25.2%). Of natural toxins, the puffer fish poisoning is 87.6%.

This is the only data collected by the Food Administration, and there is no reporting system of surveillance system in Vietnam. In fact, food poisoning cases are much higher than this number.

Food contamination in Vietnam is very high. The percentage of food contaminated with E. Coli in the survey results of MOH is 32%-66% in cooked puddings and fresh vegetables, etc. The percentage of food coloring used that was not on an approved food coloring list was 30-51%. The percentage of peanuts, soy sauce, and soybean jam contaminated with aflatoxins was 30-33%. The percentage of food contaminated with preservatives was 44-50%.
3.4 Food safety management system in Vietnam and related regulations and laws

After the growth of export markets and increasing food imports from other countries, food safety remains a high priority in Vietnam. It is necessary to rapidly develop the capacity of the food agency to control activities. In 1999, the Vietnamese government established the National Assembly Committee on Food Hygiene and Safety to be responsible for Food Safety Policy Plan in Vietnam. Food Administration (FA) under the Ministry of Health (MOH) is responsible for the management of food safety administration.

The Vietnamese legal system is based upon the national constitution, with additional guidance provided by resolutions, ordinances, laws, orders, decrees, decisions, directives and circulars. Many ministries control food safety management system in Vietnam.

The Food Safety Law is based on various food quality laws, regulations and rules issued by various ministries, primarily the Ministry of Health (MOH) and Ministry of Science and Technology (MOST), with the Ministry of Trade (MOT) and Ministry of Agriculture and Rural Development (MARD). These ministries, coordinated by MOST Directorate for Standards and Quality (STAMEQ), have developed a series of quality standards for a wide range of foodstuffs and products. When STAMEQ has not yet adopted quality standards, the Ministries usually follow appropriate international standards (WHO, FAO, CODEX) as an interim measure. Unfortunately, at present, there is little coordination between the ministries issuing working level decrees, decisions, directives and circulars. Hence, the legal framework is complex, overlapping, and confusing. Certain special commodities, such as infant formula and nutritional supplements, are subject to additional quality standards and health requirements.
3.5 Food safety standards and organization

The organization on Food Safety Standards System in Vietnam is controlled by the Ministry of Science and Technology (MOST) and coordinated by the Ministry of Health (MOH), Ministry of Trade (MOT), Ministry of Agriculture and Rural Development (MARD), Ministry of Fisheries (MOF), Ministry of Industry (MOI), Ministry of Finance (MOF) and Ministry of Culture and Information (MCI). The Committee is coordinated by the MOST Directorate for Standards and Quality (STAMEQ) that has the regulations on the organization and operation of Vietnam Food Standardization Committee.

Vietnamese Food Standardization Committee (Abbreviated as Vietnam Codex Alimentarius Committee, VCAC) is the national inter-branch organization presided over by Ministry of Science and Technology, responsible for advising policies of food.
management, food safety and hygiene in Vietnam. The Directorate for Standards and Quality (STAMEQ) under the Ministry of Science and Technology is the body belonging to VCAC. STAMEQ has following functions and tasks:

- Study and propose development approaches of standardization work, policies and measures of food management to meet with the requirements of the national economy
- Study and offer to relevant authorities building and issuing laws, regulations and programs relating to food quality, food safety and food hygiene
- Study and suggest annual and long-term plans for building a National Vietnamese Standards (TCVN) in the field of food
- Study documents of the international Codex Alimentarius Commission (CAC) for providing related information in the field of food and human health serving management bodies

National Vietnamese Standards (TCVN) and other legal documents, making suggestions for building and accepting standards of CAC:

- To propose establishing a Technical Committee of Vietnam equivalent to Technical Committee of CAC
- To coordinate with the Joint FAO/WHO Standards Program and related regional and international organizations
- To participate in meeting with CAC
- To deal with other related issues or authorized by the competent bodies

Directorate for Standards and Quality (STAMEQ) carries out inspections and clearances related to quality control, health and sanitation. Imported or exported product samples must be inspected by Quality Assurance and Testing Center (QA & TC) under STAMEQ. Then QA&TC will issue a quality certificate for export-import enterprises.
Other ministries such as MOH and MARD also oversee imports of specific products in their respective sectors, issuing standards in their sectors, known as Sectoral Standards i.e., MOH labeling regulations are required with the exception of a trademark.

### 3.6 Accreditation and certification food system in Vietnam

In Vietnam, the Vietnam Accreditation Bureau of the Ministry of Science and Technology (MOST) is generally responsible for accreditation systems. It accredits certification bodies as third parties. However, because of governmental regulations, some parts of GMP and HACCP are certified directly by MOH or MOFI.

Recently QUACERT has provided seminars on food safety management such as HACCP and ISO22000 for the private sector in some provinces. Also, QUACERT is planning to become a certification body for GAP certification in the near future.

USAID is now introducing the Durian GAP project. Details will be explained later.

Table 3-1 shows the food accreditation and certification systems in Vietnam.
Table 3-2 Accreditation and Certification Food System in Vietnam
3.7 Agricultural systems in Vietnam

Agriculture plays an important role in the Vietnamese economy, but the expansion of the agricultural sector focused only on maintaining the growth rate of agricultural productivity and increase revenue. For Vietnamese people, food is equated with security. The safety of food production or quality assurance of agricultural production is not mentioned.

The increase in world food trade and the advent of the Sanitary and Phytosanitary (SPS) Agreement under World Trade Organization (WTO) and also the aim to become a WTO member has generated a concern in Vietnam for the development and improvement of the agricultural sector. Development and improvement would be based on safety and quality assurance systems to meet the international requirements to ensure Vietnam a strong presence in global markets.

The government by MARD and other relevant ministries such as MOST, MOH, etc. has revised and issued a number of decrees and regulations that mention the agricultural sector and implementation of advanced technologies for further improvement of the quality of agricultural products. Mention is also made to increase agricultural products for export.

3.8 Constraints in agricultural sector in Vietnam

While make these changes, Vietnamese agriculture has gained a number of achievements in many fields such as production development and improvement of farm income. Still, the agricultural sector has some constraints and limitations.

a. Limited safety measures for agricultural chemicals

Many scientists, producers, and consumers in Vietnam and abroad have suggested reducing the use of chemicals such as pesticides and fertilizers in agricultural systems for crop production in Vietnam. However, the use of such pesticides and fertilizers is common. Such use is not only for treatment and control of pests and insects of crops but also impacts advantageous species in the fields. Part of the chemical residues stay in land and water in the environment and can cause pollution of the air, water and fields. Chemicals can be stored in plant products and the food chain and can negatively impact human health.

Still, the amount of chemicals used in Vietnam are increasing. They have become
serious problems for concerned consumers and agricultural ecosystems. In the decade of the 80s, about 10,000 tons of pesticides were used each year. Early in the 2000s, the amount of pesticides increased to 40,000 tons per year. About 200 kinds of pesticides were used to include 83 pesticides, 52 herbicides, 8 natural enemies, and 9 growth stimulators.

The increase of chemicals in agricultural systems in the environment has caused part of the residue to remain in products, land, water, and air. In particular, the residue in land is very high, more than 3 to 5 times the permitted level. These are serious chemicals, and use must be limited in systems.

b. Awareness of farm product quality and sanitary standard controls

The most important issue in the agricultural sector is the lower quality products and low sanitary standards at every step of the production of agricultural products. One of the reasons is different and inappropriate standards for customer requirements. There are not enough research and development activities to contribute to farm production and farm quality control with an extension system.

c. Post harvest technology for fruits and vegetables

There are many post-harvest losses during production and transportation because farmers do not have adequate storage facilities to maintain the condition and quality of their products. Their fruits and vegetables easily perish given the limitations of packaging and transportation technologies.
Figure 3-4   Problem Analysis of the Vietnamese Agricultural Sector

- Low quality of Agricultural Products
  - Few crop categories
  - Not enough farmer training
  - Limited safety measures
  - Inappropriate standard for consumer tastes
  - Not enough post-harvest services
  - Farmer does not have enough money
  - A significant amount of post-harvest loss
  - Not enough storage facilities
  - Limited transportation
  - Not enough packaging technology
  - Not enough R & D
  - Not enough knowledge of pesticides
  - Low competitiveness
  - No export increase
  - Not comply with requirements
  - Low farm income
  - Not enough market surveys
  - Not enough knowledge of fertilizers
  - Farmer cannot buy machines or materials
  - Problem Analysis of the Vietnamese Agricultural Sector
    - Non-compliance with SPS requirements
    - High transportation costs
    - Limited refrigeration transport systems
    - Unable to participate in training
    - Not enough pest control systems
    - No relation between research & extension
3.9 Recent efforts in Vietnam

Governmental and private sectors have made some efforts to resolve the above mentioned constraints and problems, especially for food safety issues.

a. The three less, three more MARD project

Since 1980, Rice Integrated Pest Management (IPM) program has had many activities to train farmers and technical staff in the application of the IPM technique in the Mekong Delta. However, the recent KAP (Knowledge, Attitude, Practice) survey showed a large gap between recommendations and the actual farming system: too dense rice direct seedlings, too much use of nitrogen fertilizers and pesticides.

The purpose of the project is to develop a social model, to change farmer understanding, attitudes and habits and by doing so, to change farming practices from conservative to more progressive and sustainable.

The “not early use of pesticides for rice” campaign promoted by MARD used mass media such as posters, leaflets, stories on radio, TV, newspaper, experimental fields, and other methods to transfer a simple message: to use pesticides for rice in 40 days after seeding is not necessary. For farmers to get good results, the spraying time decreased from 3.35 to 1.56 per crop as compared with years before. Three years after launching the campaign, the experience in science and technology progress transfer showed the campaign was rapid, effective and economical for farmers.

In this subject, a synthesis of transfer methods was used: FPR (Farmer Participatory Research) methods; mass media methods, and theories: the TRA (Theory of Reasoned Action) and other sociological theories to transfer a new technique “Three less, three high”: less seed; less nitrogen fertilizer; less pesticide, high yield; high quality; high profit.

Proceeding from the success of the My Thanh Nam experimental field, the technique “Three less, three more” has been widely and deeply applied to the whole Mekong Delta since the 2003 to 2004 crop. This is a new tendency to increase the rice yield in the Mekong Delta and to conform to MARD policy and direction for the time of modernization and industrialization: diversifying farming products, increasing productivity and quality, reducing farming costs.

b. The Hanoi Agricultural University farmer training program

The center for practice and technology transfer of agricultural production at Hanoi Agricultural University has a farmer training school that teaches green vegetable
production.

Most all the cultivation systems in Vietnam are small-scale family farms operations. There are many cultivation methods, and most of the family farm operations use agricultural chemicals in compliance with the law and under the control of the Plant Protection Department of MARD. Green vegetables are a good agricultural approach that the government has suggested to farmers for controlling agricultural crops for their food consumption.

3.10 The Good Agricultural Practice (GAP) System in Vietnam

Most farming systems in Vietnam are work intensive. Animal manure is used to improve soil fertility with the understanding that manure can increase the yield of agricultural crop production especially to save costs for buying fertilizer and only buying pesticides for insect and disease control.

The Good Agricultural Practice (GAP) system is a new system in Vietnam. GAP differs from the Vietnamese traditional agricultural approach with the concept of safety control from the first step of agricultural input, the cultivation practice system. GAP concepts continue until the finished crop production. They ensure that the system will produce a safe raw material and secure safety for growers and also, for consumers.

In September 2005, the Vietnamese government, the US Agency of International Development (USAID) and the Australian Agency for International Development (AUSAID) signed a cooperative agreement to lunch a GAP project with the South Fruit Research Institute (SOFRI) to assist in the development of dragon fruit production in Vietnam. The project aims to introduce the European GAP (EUREPGAP) system for helping dragon fruit growers in Binh Thuan and Tien Giang provinces to comply with project standards for receiving permission to export dragon fruit to the European market. Vietnam currently devotes around 10,000 ha, mainly in Binh Thuan, Long An and Tien Giang provinces. Normally, Vietnam produces about 150,000 – 170,000 tons of dragon fruit for the Asian market because the food safety requirements for export to North America and the EU have not yet been met. The government hopes after that after GAP enforcement, Vietnam will be able to export dragon fruit to North American and EU markets.
4. Food Standards and Certification Systems in Asian Countries

< Case study 1: Thailand >

4.1 Overview of the present situation on food safety in Thailand

Under the 9th Economic and Social development Plan (2002-2006), development strategies are geared toward growth in Thailand with quality and stability as long-run aims. One of the country’s competitive strategies is in the agricultural sector. The strategy emphasizes the development of new kinds of value-added, nutritious foods to accommodate to the new stringent standards and the demands of a more discerning and definitely more health-conscious generation. Food safety is one of the most important issues for food exporting countries in Asia such as Thailand.

The new improvements in standard agricultural product systems is the focus on food quality, from the primary product to the final products in the whole food chain to comply with a new practice of food standard that follows the requirements in the international market. Two ministries undertake the primary policy and action plan. The Ministry of Agriculture and Cooperatives (MOAC) is responsible for ensuring export food safety and the Ministry of Public Health (MOPH) is responsible for monitoring food imports and domestic consumption. The two ministries try to strengthen the safety inspection and the quality of certification for food and agricultural products. Governmental agencies have taken many proactive steps, which have made Thai consumers much more aware of food safety issues.

In the MOAC action plan, activities have been the responsibility of the relevant agencies from the farm up to the final product. The National Bureau of Agricultural Commodity and Food Standards (ACFS) is responsible for an Accreditation Body (AB) to accredit Certification Body (CB) for food related systems (HACCP, GMP, GAP, etc. under the international ISO/IEC Guide 65). ACFS has been setting the new National Agricultural Standards that cover all quality and safety-related issues in agricultural commodities and practices. In addition, ACFS accredits the food laboratories in the country. The Department of Agriculture (DOA), Department of Livestock Development (DLD), Department of Fishery (DOF), and the three important departments play their roles, but they also are the competent authority in their respective sectors to support and facilitate exporting activities to ensure the good quality and more safety in food products.
To implement the governmental food safety policy, MOAC has decided to use the Q-Mark, the indication of quality guarantee, logo for the certification of all agricultural commodities in all the relevant departments (DOA, DLD, DOF, DOAE, DCP, LDD, ACFS). These are the departments involved in food that secure safety in food from agricultural input to the final product under the inspection and certification of several program practices (COC, GAP, GMP, GHP, Organic and HACCP).

The farm producers who pass the National Food Safety Program at each step of the farm production procedures will get a Q-Mark Certificate (Q GAP Food Safety Program) that assures the quality of their products to consumers.

The Q-Mark logo is not only used for agricultural and food products for export, but also for the domestic food market.

The MOAC 2004 Annual Report shows that the numbers of farms that can pass the GAP Certification system are as follows:

- 140,351 fruit and vegetable farms by DOA
- 2,288 poultry and dairy farms by DLD
- 27,678 shrimp and fish farms by DOF
- 265 organic fruit and vegetable farms by DOA

MOAC planned to target the certification of all farm commodities to increase to 100% by the end of 2005. During 2004 to 2005, various types of cooperative projects
and studies related directly or indirectly were implemented in Thailand. The MOAC initiative is not only for the development and implementation of its own National GAP, but also for managing an international cooperative project with many countries. Such projects and countries include an American group for training based on EUREPGAP (European Union Good agricultural Practice), a Japanese consultant for training on GAP emphasizing mainly pesticide residues, an Australian Group leading the development of ASEANGAP (Asean Good Agricultural Practice) for ASEAN member countries, and FAO managing the Training Program on GAP/GMP/HACCP for fruits and vegetables for DOA officers.

The Ministry of Public Health (MOPH) has the authority for food safety from the Food Law (Amend in 2000). The law makes it illegal for anyone to produce, import or sell unsafe food. The law is enforced by the Food and Drug Administration (FDA), and the Department of Health (DOH) is responsible for ensuring food safety for food handling services and retail for domestic consumers. The government and regulatory agencies have taken many proactive steps. The FDA has issued food regulations titled “Code of Practice General Principle of Food Hygiene” Food Act No. 193 (Amend B.E.2000), Subject: Manufacturing Processes, Equipment and Storage of Food products. This regulation covers 57 food group products.

There are many food launched safety programs by MOPH and other governmental agencies to promote awareness among consumers in such areas as food hygiene programs for restaurants.

At the moment, there are approximately 20 governmental agencies sharing these roles and activities and doing so from different perspectives in terms of law enforcement and regulators. Also, the agri-food industry tries to improve the production system to meet the requirements of international standards with support from the relevant governmental agencies.

The level of enforcement of food safety regulations in Thailand seems to need more attention. GAP and HACCP are voluntary while implementation of GMP for packinghouses and processing establishments are upon request. Plans related to food safety include Organic, EUREPGAP, SQF2000, BRC and ISO 9000. There are about 30 certification bodies in Thailand currently providing various food safety certification services for the food industry in Thailand. The number of HACCP certified companies for medium and large operations was estimated to be at 450 to 500 companies in 2004, being less than 5% to the total number of food companies. Figure 4-2 shows the roles in
food safety managements for MOPH and MOAC in accordance with international food standards required by importing countries related to food safety systems.

Figure 4-2 The food safety management system in Thailand

4.2 Implementation of the GAP System in Thailand

Since 2003, MOAC has executed food safety strategic policy. A National Good Agriculture Practice (GAP) program was developed based on the technical program that DOA initiated in 1998 of the Safe Vegetable Project. The technical program project aims to improve and maintain the quality and safety of Thailand’s fruit and vegetable products to meet the international market requirement standards. This is a mandate to implement food safety programs in the country. Governmental agencies -- DOA, DLD, DOF, LDD, and DOAE – plan strategies and mechanisms for developing the capabilities of governmental officers and farmers to understand the new practices in the farming system. The GAP National Program has been separated into two programs, one for governmental officers and the other for farmers and producers. MOAC develops several documents to apply GAP to farmers, farm advisors and farm inspectors to help them gain a clear understanding of the new farming practices.

Contents of GAP manual in DOA are as follows:
1) GAP on crops: A manual that describes practices required to improve quality as well as safety and address suitable farm site, varieties, cultivation practices,
fertilizer use, irrigation, crop sanitation, crop protection, pesticide use, harvesting, transportation and record keeping.

2) GAP inspection manual: A general manual for inspecting farms applying for GAP certification.

3) GAP implementation guidelines for growers and farm advisors:
   - Quality management system: GAP on crops for growers and farm advisors.
   - Supporting document on quality management system: GAP on crops for growers and farm advisors.
   - Recording forms on quality management system: GAP on crops for growers and farm advisors.

4) Check lists for GAP inspection:
   Check list for GAP inspection have eight requirements including water source, growing area, use of agro-chemicals and their application method, storage and transportation on farm, record keeping, production process, and post harvest.

Now, GAP places more emphasis on foods for export than foods for domestic consumption. Many requirements and regulations have been promulgated including the inspection of pesticide residues or antibiotics, which may have contaminated vegetables, fruits, meat and fishery products before exporting to various countries. Many importing countries require a Pesticide Residues Certificate at the time of export. The level of maximum residue limited (MRL) of agro-chemicals substances or antibiotics and methods of analysis are in accordance with importing country regulations. Some countries require a EUREPGAP Certificate, especially the EU.

<table>
<thead>
<tr>
<th>Governmental Agency</th>
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<th>CoC</th>
<th>GAP</th>
<th>Organic</th>
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<tr>
<td></td>
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</tr>
<tr>
<td>DOA</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Organic Farm</td>
<td>-</td>
<td>-</td>
<td>265</td>
</tr>
<tr>
<td>DLD</td>
<td>Animal Farm</td>
<td>-</td>
<td>2,288</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slaughterhouse</td>
<td>-</td>
<td>159</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Ministry of Agriculture and Cooperatives Annual Report 2004
4.3 GMP and HACCP in Thailand

After the Thai government promoted the “Food Safety Year” in 2004, the agro-food industries tried to improve their production systems to meet international requirement standards with the support of DOA, DOF and DLD of MOAC (Accredited by ACFS), the Department of Medical Science (DMS) of MOPH, and the Thai Industrial Standards Institute (TISI) of Ministry of Industry (MOI). Each department has its own system to provide food safety certification of GMP, GHP, Code of Conduct (COC) and Hazard Analysis Critical Control Point (HACCP).
4.4 Organic farming and the standard systems in Thailand

In 2000, the Department of Export Promotion (DEP) of the Ministry of Commerce (MOC) with the cooperation of DOA launched the Pilot Project of Organic Food Product exports from Thailand. The pilot project aims to produce and export organic food products from Thailand to the world market. At that time, DOA had tried to initiate a National Organic Standards Program for export farms. The National Organic Standard was established in 2000, but it was not accepted by importing countries.

Since ACFS was established in 2003, it has set up a new National Organic Standard. The standard was developed from the DOA technical program in 2000, and a guideline of farming practices and also an inspection and certification program from MOC pilot project to improve and maintain the quality of an organic production and standards system that is the same as the international organic standards requirement. The DOA (Bureau of Expertise) first issued an organic mark to identify a production system different from conventional cultivation, but in 2004, MOAC changed to the Q-Mark logo with a different code number and a specific organic explanation inside the mark. Now, the National Standards of Organic is only a farming practice. Livestock, fisheries, other product processing, and agricultural inputs are in the process of standard document MOAC issuance.

Figure 4-4 The National Organic Standard Certification System in Thailand
4.5 Food safety systems and organization in Malaysia

In 1998, the Malaysian government developed a strategy, the National Food Safety Policy, (1998-2010), and the national policy was launched in February 1999. The National Action Plan on Food Safety developed from the policy. The Malaysian action plan is the product of an extensive effort by various governmental agencies and non-governmental organizations (NGOs).

The action plan clearly defines the role of each stakeholder such as the Ministry of Agriculture (MOA), Ministry of International Trade (MIT), Ministry of Education (MOE), Ministry of Health (MOH), Food Industries Association (MAFMAG, MFCA and MFFPA), etc. The plan includes the activities of governmental agencies and NGOs with the support and involvement of the National Food Safety and Nutrition Council.

Malaysia Agriculture Research and Development Institute (MARDI) and relevant agencies such as DOA, DVS, DOF, DOE, and FAMA, have been responsible for the action plan to develop food safety systems to meet the world market requirements to be competitive in Malaysia. MARDI will develop and implement a national GAP for plants, animals and fisheries at the farm level:

- Prevention of food contamination on farm (animals, fish, vegetables, fruits, etc.) from hazards with farm control and management of water, waste and manure.
- Control of the hazards during post-harvest (post-harvest handling practices).
- Improvement of food traceability systems and development of traceability guidelines.
- Improvement of training and extension programs for farmers.
- Strengthening monitoring and surveillance programs for farms.
- Promulgation of laws and regulations at the farm level, e.g., the Pesticide Act.
- Improvement and promotion of food safety through research and development such as post-harvest handling, risk assessment, etc.

MOH has been responsible for food regulations, with subjects such as food hygiene, labeling, imports and exports, laboratories and food standards. Inspection manuals are developed by MOH to cover the registration and inspection of all food establishments under Malaysia’s Food Law.

- Facilitate GMP and hygienic and sanitary practice of food premises.
- Ensure proper food storage and traceability during distribution of food
- Education for food handlers and food service workers including catering and direct sales.

4.6 GAP implementation in Malaysia

National Food Safety Plan has GAP, GMP, GHP and HACCP implementation programs for farmers and the agro-industry sector. In 2003, MARDI implemented a National GAP program to improve the farm sector under the new farming system. The Department of Agriculture (DOA), Department of Veterinary Services (DVS), Department of Fisheries (DOF) and Department of Environment (DOE) are responsible for the new system. The national good agricultural practice (SALM), is a good agricultural practice (GAP) program in an environmentally friendly way that yields good quality, safe products that are suitable for human consumption. The standard practices aim to prevent food contamination at the farm level (animals, fish, vegetables, fruits, nuts, etc.) from hazards (pathogens, chemicals, antibiotic residues, and physical substances) and call for the practice as:

- GAP (Good Agricultural Practice) (SALM) by Department of Agriculture (DOA)
- Good Animal Husbandry Practice (SALT) by the Department of Veterinary Services (DVS)
- GAP (Malaysian Aquaculture Farm Certification Scheme (SPLAM) by the Department of Fisheries (DOF)

Farm Accreditation done by DOA & DVS, which evaluates farming practices to stipulated conditions imposed by standards. Farms conforming to stipulated conditions will receive a certificate as official recognition, which allows the producer to affix seals of quality on their products destined for domestic and international markets.

There are three major aspects covering different conditions:

1) Environmental Setting of Farm
2) Verification of Farm Practices
3) Safety of Farm Products

Most of the conditions for evaluation are similar to those listed under the EUREPGAP protocol for fresh fruits and vegetables and the CODEX Code of Hygienic Practices for the primary production and packing of fresh fruits and vegetables. The conditions relate to:

1) The environmental setting of the farm
2) The farmer’s adherence good agricultural practices
3) The safety of the produce

Data and information required for evaluation purposes are collected from site investigations, farm records, and field observations and through sampling of products for analysis.

4.7 GMP and HACCP in Malaysia

In the National Action Plan on Food Safety, the Malaysian government has a strategy to develop and implement GMP and hygienic and sanitary practices of food premises and factories through established guidelines, and to formulate legislation pertaining to food hygiene and sanitation responsibility by MOH in following areas:
- Location of premise
- Design of premise
- Food handling and processing
- Others

MOH plans to establish and implement GMP guidelines for processing plants and incorporate a quality assurance program in GMP and ensure that the food industries implement an effective food safety program. MOH controls only GMP and hygienic and sanitary practices. The HACCP system is supported by programs of the Ministry of Trade (MITI), Ministry of Domestic Trade and Consumer Affair (MDTA), and Small and Medium Industries Development Corporation (SMIDEC) to make available grants to support the Food Related Industries Association activities and promote the HACCP program to ensure food industry implementation of an effective food safety program.

4.8 Organic system in Malaysia

DOA has developed an outline of the National Organic Standard for the post farm production sector to give detailed guidelines for the application of the Malaysian Standard 1529:2001. The standard guidelines are included in the production, processing, labeling, and marketing for plant–based organically produced foods. The standards mention specific requirements such as:
- Additives of non-agricultural origin
- Processing and preparation aids
- Substances and methods permitted for pest control in storage and transport units
- Substances permitted, for sanitation, storage and handling, criteria for the evaluation of additives and processing aids for organic food product.
The standards form the basis of the DOA inspection and certification scheme to complement and assist in the operation and implementation of the certification system. The documents are standards that are relevant and applicable to the Malaysian operating environment and they are the same as required in importing countries.

Figure 4-5 SALM certification procedure
5. Food Standards and Certification Systems in Europe and the USA

5.1 Global Food Safety Initiative (GFSI)

In May 2000, the Global Food Safety Initiative (GFSI) was launched. It was coordinated by Comite International d’Entreprises a Succurlales (CIES). The Food Business Forum is the international network of retailers and their suppliers, which focuses on monitoring issues around food safety to ensure consumer protection and strengthen consumer confidence. The main objective of GFSI is to implement a scheme to benchmark food safety management standards worldwide.

Retailers accept certificates based on standards that assess their suppliers in order to ensure that their production is carried out in a safe manner. There are many certificates and suppliers with many customers that may be audited many times at a high cost and little added benefit.

GFSI does not undertake any accreditation or certification activities, but GFSI issues a guidance document that contains criteria for food safety standards. Any food safety or farm assurance standard can be benchmarked to encourage the use of third party audits against benchmarked standards. Such benchmarking would be done with the goal of enabling suppliers to work more effectively with fewer audits and reduced costs for retailers while ensuring the food quality.

GFSI has a project to develop a benchmark model, outlining the following key elements that a high quality and safety food standards should contain:

- a food safety management system
- good manufacturing (or agricultural) practices and
- a HACCP-based system

A study of existing standards such as ISO standards was done to develop this set of requirements, based on Codex Alimentarius and legislative requirements. The five food manufacturing standards listed below have been benchmarked against GFSI Guidance Document. They are in compliance with the criteria of the guidance.

1) The BRC Global Standard – Food
2) Dutch HACCP Codes
3) EFSIS Standard
4) International Food Standard (IFS)
5) The SQF 2000 Code

5.2 British Retail Consortium (BRC) Global Standard – Food

The British Retail Consortium (BRC) Global Standard – Food was developed under the terms of the UK Food Safety Act 1990 to assist all retailers involved in the food supply to fulfill their legal obligations and protect the consumer. The act was to do so by providing a common basis for audit under the BRC Technical Standard for companies supplying retail brand food products although the act was originally developed primarily for the supply of retail brand products.

The BRC Technical Standard includes basic principles of retailer standards and has been continuously reviewed to reflect the requirements from retailers and suppliers with three requirements:
- To adopt and implement Hazard Analysis and Critical Control Point (HACCP)
- To have an effective quality management system with necessary documents
- To control factory environment, products, processes and personnel standards

The objective of the BRC Global Standard – Food is to specify safety, quality and operational criteria required to be in place within organization to supply food products to UK retailers, their suppliers or standard uses. The standards contents allow an assessment on the premises and operation systems and also allow an assessment by a competent third party in accordance with the standard requirements.

The certification bodies as third parties must gain accreditation from ISO/IEC Guide 65 and meet the requirements of the BRC Global Standard – Food and supporting documentation. Significant efforts have been made to promote transparency in the implementation process for ensuring system integrity and robustness.

The principles of the BRC Global Standard – Food are:
- To minimize duplication of evaluation
- To work in collaboration with accreditation bodies to ensure the accreditation process
- To encourage local evaluation
- To ensure openness, transparency and compliance with fair trade legislation
- To review and improve standards and the supporting processes
- To promote best practices

The scope of the BRC Global Standard – Food is from primary producer to processor
who supply as retailer the brand product and food or ingredients for use by food service companies. This excludes wholesale, imports, distribution and storage.

Source: http://www.brc.org.uk/standards/

Figure 5-1 BRC Food Certification Flow
5.3 Dutch HACCP

The effect of food safety management systems is the result of many countries trying to safeguard their food products. Hazard Analysis and Critical Control Point (HACCP) requires such an approach in their legislation for food processing companies.

In 1996, a group of certification bodies in the Netherlands developed a standard for food safety management. The group did so by requiring HACCP based on Food Safety System. They currently issue more than 1900 certificates under associated certification bodies, and about 700 are outside of the Netherlands.

The major strong points of “The Requirement for HACCP based Food Safety System” include the following:

- Continuous participation of all parties concerned with food safety through the maintenance of the certification scheme
- Practical elaboration of the HACCP principles and the steps stipulated under the Codex Alimentarius requirements suitable for food business operators
- Application of this scheme by a large number of certification bodies under accreditation by the internationally recognition accreditation body

The third published version of “The Dutch HACCP Code” as requirements in 2002 contains all the relevant ISO22000 standards that were developed by the ISO Organization.

The following benefits are associated with certification by the Dutch HACCP Code:

- Conveys upon the supplier a degree of confidence required by major retailers and buyers in the food sector
- As a technical specification recognition by the GFSI
- Provides buyers, consumers, and trade agencies with enforcement by the government that are justified assurance that the management and control systems of safety and legality of food are in place
- Includes comprehensive coverage of management responsibility, HACCP application and the prerequisite implementation program

The certification scheme provides a corporate third party endorsement of best practice to food safety commitment.
5.4 International Food Standard (IFS)

In 2002, in order to create a common food safety standard, German food retailers developed a common audit standard called the International Food Standard (IFS). In 2003, French food retailers and wholesalers joined the IFS Working Group.

The IFS aim is to create a consistent evaluation system for all companies supplying retail brand food products. Such an evaluation system would have uniform formulations, uniform audit procedures and mutual acceptance of audits for the certification bodies and auditors.

The list of requirements of the IFS deals with five main subjects:
- Management of the quality system
- Management responsibility
- Resource management
- Product regulation
- Measurements, analyses, and improvements

The auditor will evaluate against IFS standards. The standards are divided into two levels, a foundation level and recommendations at a higher level:
- Foundation level: These criteria are considered minimum requirements for the international food industry
- Higher level: These criteria are considered as a high standard in the food industry
- Recommendations: These criteria are recommended for all auditees, who wish to demonstrate best practice in the sector.

The requirements for auditors and certification bodies are strictly regulated. All certification bodies shall have an accreditation against EN45011 on IFS. Only authorized auditors who have passed a written and oral examination can audit against the standards. Auditors shall have professional knowledge of the IFS. The auditors can only audit within their competency in a given sector. The requirement for demonstration of competency is at least two years of professional experience in a specific sector or at least ten audits in the sector.

Finally, auditors who comply with these requirements shall work only for an IFS certification body accredited for auditing in accordance with the IFS.

The BRC report could be taken into consideration, but it is not a sufficient. An IFS audit will be required even though BRC certified.

Source: http://www.food-care.info/
5.5 SQF2000 and SQF1000

The Safe Quality Food (SQF) program is offered by The Food Marketing Institute. It is a certification program based on the principles of HACCP, Codex, ISO and Quality Management Systems, including standards for all food commodities from farm to retail, third party auditing and training.

The SQF Program is an integrated food safety and quality management protocol. It is specifically designed for the food industry with application in the food supply chain.

SQF Certification provides an independent and external validation that a product, process or service complies with international, domestic and other specified standards and enables food suppliers to give quality assurances to the required standards.

The SQF 2000 Code has been used in the food manufacturing and distribution sectors. In addition to GMP, a supplier develops and maintains Food Safety and Quality Plans to control those aspects of operations that are critical to maintain their system. In contrast, the SQF 1000 Code is designed specifically for primary producers.

SQF certification is an external verification system for supplier to produce safe, quality food. SQF supports certified brand products, so suppliers can design and implement customized management systems to demonstrate equivalence with GAP/GMP and other practice programs.

The SQF program has been implemented by more than 5,000 companies operating in Asia-Pacific, the Middle East, the United States, Europe and South America. Registered SQF Experts and SQF Auditors implement and audit SQF systems.

Source: http://www.sqfi.com
5.6 EUREPGAP

EUREPGAP is a certification system developed in 2000 by Euro-Retailer Produce Working Group (EUREP) to secure food safety for agricultural products for environmental conservation agriculture. However, the system is not legal binding.

EUREPGAP enables producers to combine multiple audits for multiple products into one single audit, positioned at a level appropriate to the markets they are supplying.

EUREPGAP offers a series of standards covering GAP in the agro-food industry. The program is set to become the European norm for farm inspections and operates under ISO/IEC Guide 65. Using the standards established for various components, producers have three options to receive their certification:
1. Certification through direct application to an approved certification body
2. Certification through a commodity marketing organization
3. Certification by being part of a EUREPGAP recognized national or regional scheme

Producer can determine the level appropriate for the markets from Table 5-2.

<table>
<thead>
<tr>
<th>Level</th>
<th>Level Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All food safety issues based on generic HACCP and animal welfare issues directly related to food safety</td>
</tr>
<tr>
<td>2</td>
<td>Adds additional welfare, worker welfare and protection of the environment</td>
</tr>
<tr>
<td>3</td>
<td>Adds enhancement measures for animal welfare, worker welfare and environment, as well as assurance from birth</td>
</tr>
</tbody>
</table>

Table 5-2 An example of the levels of accountability applied to the storage of medications

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Compliance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicines must be stored in accordance with the label instructions in a sound, secure, locked, well lit location that is away from other materials.</td>
<td>There must be emergency information with corresponding facilities for workers to deal with accidents during application.</td>
<td>Medicines are stored at the correct temperature in a secure locked store and individual medicines in accordance with label instructions.</td>
<td>Emergency information and facilities are available adjacent to the store.</td>
</tr>
</tbody>
</table>

Source: [http://www.eurepgap.org/](http://www.eurepgap.org/)
6. Food Standards and Certification System in Japan

Japan has its own food accreditation and certification systems, which are controlled by the central government, prefectural governments and private sectors at each level.

Central Government: Accreditation of JAS Organic, Traceability systems for meat and agricultural products, Guideline of GAP, Approval of Comprehensive Sanitation Controlled Manufacturing Process (HACCP), etc.

Prefectural governments: Specially Grown Agricultural Products, Prefectural own brand certification, Voluntary Certifications such as HACCP, etc.

Private sectors: Private supermarket brands, direct delivery from farms, JAS Organic Certification, HACCP, etc.

In this chapter, the following certification systems are shown because they are closely related to agricultural production and good references for consideration of future project ideas.

- JAS Organic
- Specially grown agricultural products
- Prefecture brand products
- Some topics in GAP in Japan

6.1 JAS Organic
a. JAS Organic

Japanese Agricultural Standards for organic agricultural products (JAS-Organic) were established in compliance with the “Guidelines for Production, Processing, Labeling and Marketing of Organically Produced Foods” adopted in 1999 of CODEX general assembly. The guidelines passed deliberation by the Research Committee for Agricultural and Forestry Standards and were posted by the Ministry of Agriculture, Forestry and Fishery (MAFF) in January 2000 when Japan revised JAS agricultural law.

JAS-Orgnic stipulates standards for production methods and labeling system.

1) Production method standards
   - Conditions for farms
   - Cultivation management with manure on farms
   - Seeds or seedlings to be sown or planted in the field
   - Controlling harmful plants and animals on farms
- Management concerning transportation, screening, conditioning, cleaning, storing, packing and other processing of post-harvest

2) Labeling system

The labels affixed on products cultivated by the organic method are as follows:
“Organic Agricultural Product” and “Organically Cultivated Agricultural Product.”

b. Principles of organic agricultural product

To sustain and enhance natural recycling in agriculture, the productivity of farmland derived from the soil properties shall be generated by avoiding the use of chemical synthetic fertilizers and agricultural chemicals. Organic agricultural products shall be produced in fields adopting such cultivation management methods as reducing as much as possible the load derived from agricultural production on the environment.

Field conditions of organic agricultural product production are:
1) To clearly divide the field so as to protect from contamination by drifting fertilizer, soil improvement materials, or agricultural chemicals. In paddy fields, necessary measures shall be taken to protect from prohibited substances such as polluted agricultural water.
2) Over a period of at least 3 years before the first harvesting of perennial plants (except for pasture grasses), and at least 2 years before the production of other plants, fields shall conduct cultivation of agricultural products using the organic method.

c. JAS organic mark

A JAS organic mark is following with the name of registered certification organization:

![JAS organic mark](image)

Name of registered certification organization

Figure 6-1 JAS sample organic mark
d. Accreditation and certification system of organic products in Japan

![Diagram of JAS Organic accreditation and certification system]

- **Source**: Ministry of Agriculture, Forestry and Fisheries, Food Safety and Consumer Affairs Bureau [2004] *The Inspection Certification System for Organic Agricultural Products*; MAFF

**Figure 6-2 JAS Organic accreditation and certification system**

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e. Organic food market trends in Japan

Figure 6-2 shows the 2004 organic food market trends in Japan.
- 90% of organic agricultural products is imported.
- 60% of domestic organic agricultural products is vegetables.
- 60% of domestic organic agricultural processed food is soybean related products.
- 77% of imported organic agricultural processed food is other agricultural products.
(1) Ratio of imports of organic agricultural products and processed foods

(2) Ratio of organic agricultural products by item in FY 2004

(3) Ratio of organic agricultural processed foods by item in FY 2004

Figure 6-3 Statistical Data on Organic Agriculture in 2004
6.2 Certification system of Specially Grown Agricultural Products

a. Specially Grown Agricultural Products

Specially grown agricultural product, *tokubetu saibai nosanbutsu*, is a certified product to be cultivated using less than 50% of chemical fertilizers and conventional chemically synthesized pesticide methods.

The following table is the scope of concepts on organic and specially grown agricultural products, based on the JAS organic definition and the MAFF guidelines of Specially Grown Agricultural products in Japan.

The target products for the system are vegetables, fruits, crops, beans and teas that depend on the products of province.

**Table 6-1 Scope of organic and specially grown agricultural products in Japan**

<table>
<thead>
<tr>
<th>Scope of Concepts on Organic and Specially Grown Agricultural Products</th>
<th>1) and 2)</th>
<th>3) - 6)</th>
<th>7) - 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Organic products</td>
<td>No use over 1 year before harvesting</td>
<td>Others</td>
<td>Use less than 50% count of conventional growing</td>
</tr>
<tr>
<td>2) Transition-staged organic products</td>
<td>8) No chemical fertilizer use products</td>
<td>3) No pesticide, no chemical fertilizer products</td>
<td>5) Reduced pesticide, no chemical fertilizer products</td>
</tr>
<tr>
<td>3) No pesticide, no chemical fertilizer products</td>
<td>9) Reduced pesticide use products</td>
<td>4) No-pesticide, reduce fertilizer products</td>
<td>6) Reduced-pesticide and chemical fertilizer products</td>
</tr>
<tr>
<td>4) No-pesticide, reduce fertilizer products</td>
<td>10) Reduced chemical fertilizer products</td>
<td>7) No pesticide use products</td>
<td>Convention growing products</td>
</tr>
<tr>
<td>5) Reduced pesticide, no chemical fertilizer products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Reduced-pesticide and chemical fertilizer products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) No pesticide use products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) No chemical fertilizer use products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Reduced pesticide use products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) Reduced chemical fertilizer products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11) Out of scope of the above definitions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Chemical fertilizers

In this system, the chemical fertilizer is nitrogen component, not the components of phosphate and potassium. The certification criterion is to be 50% or less for the amount
of nitrogen component calculated from applied chemical fertilizers. However, the 50% does not include the nitrogen derived from organic fertilizers such as animal manure or oil meal.

The total amount of nitrogen can be calculated from the data shown on the back of the fertilizer bag.

c. Chemical synthesized pesticides
Chemically synthesized pesticides are produced during the chemical process, but they do not include biological pesticides, natural enemies or food vinegar.

The number of pesticide applications is calculated from the product of the number of active ingredients and the number of sprayings.

d. Certification procedure
If farmers want to apply for the certification, they need to submit their cultivation plan to the prefectural government through the city office, two months before the sowing period. The plan is confirmed if compliance is within certification criteria.

During the cultivation period, the certification application form with management records is sent one month before shipment. If the application complies with certification conditions after the screening, a certification is given.

During product shipment, the certification mark is attached with guideline labeling and distributed to markets. A results report is submitted to the prefectural government.
e. Certification flow of Specially Grown Agricultural Products

Figure 6-4 Certification flow of specially grown agricultural products
f. Criteria on chemically synthesized pesticides and chemical fertilizers in specially grown agricultural products

Each province has its own criteria on chemically synthesized pesticides and chemical fertilizers in specially grown agricultural products based on conventional application of pesticides and fertilizers. Table 6-2 is a sample of the criteria in one prefecture.

### Table 6-2 Criteria on Specially Grown Agricultural Products

<table>
<thead>
<tr>
<th>Crop name</th>
<th>Crop type</th>
<th>Sowing Period</th>
<th>Conventional</th>
<th>50% Reduction</th>
<th>Conventional</th>
<th>50% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy rice</td>
<td>Early cultivation</td>
<td>Middle of Apr.- Beginning of Mar.</td>
<td>14</td>
<td>7</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Early planting</td>
<td></td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Ordinary cultivation</td>
<td></td>
<td>13</td>
<td>6</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>Soybeans</td>
<td></td>
<td></td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Japanese radish</td>
<td>Spring variety</td>
<td>End of Feb. - End of Mar.</td>
<td>4</td>
<td>2</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>Summer variety</td>
<td>Middle of Aug. - End of Sep.</td>
<td>6</td>
<td>3</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>Winter variety</td>
<td>Beginning of Dec. - End of Jan.</td>
<td>4</td>
<td>2</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>Carrots</td>
<td>Summer variety</td>
<td>End of Jun. - End of Aug.</td>
<td>7</td>
<td>3</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Winter variety</td>
<td>Middle of Dec. - Beginning of Mar.</td>
<td>8</td>
<td>4</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Onions</td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
<td>27</td>
<td>13.5</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Summer variety</td>
<td>Beginning of Jun. - End of Aug.</td>
<td>7</td>
<td>3</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Autumn variety</td>
<td>Beginning - End of Sep.</td>
<td>7</td>
<td>3</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Spinach</td>
<td>Spring variety</td>
<td>End of Feb. - End of May</td>
<td>4</td>
<td>2</td>
<td>15</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>Summer variety</td>
<td>Beginning of Jun. - End of Sep.</td>
<td>4</td>
<td>2</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Autumn variety</td>
<td>Middle of Sep. - End of Nov.</td>
<td>4</td>
<td>2</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>Winter variety</td>
<td>Beginning of Dec. - Middle of Feb.</td>
<td>2</td>
<td>1</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Green Onion</td>
<td>Spring variety</td>
<td>Beginning of Mar. - Middle of Jun.</td>
<td>21</td>
<td>10</td>
<td>31</td>
<td>15.5</td>
</tr>
<tr>
<td></td>
<td>Autumn variety</td>
<td>Middle of Sep. - Beginning of Oct.</td>
<td>17</td>
<td>8</td>
<td>39</td>
<td>19.5</td>
</tr>
<tr>
<td></td>
<td>Winter variety</td>
<td>Beginning of Jan. - End of Feb.</td>
<td>22</td>
<td>11</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Pak-choi</td>
<td></td>
<td></td>
<td>5</td>
<td>2</td>
<td>15</td>
<td>7.5</td>
</tr>
<tr>
<td>Green soybean</td>
<td>Open field</td>
<td></td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Tunnel</td>
<td></td>
<td>5</td>
<td>2</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Green house</td>
<td></td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>Sweet corn</td>
<td>Open field</td>
<td></td>
<td>3</td>
<td>1</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Tunnel</td>
<td></td>
<td>4</td>
<td>2</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Spring harvest</td>
<td>Beginning of Oct. - Middle of Nov.</td>
<td>5</td>
<td>2</td>
<td>25</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>Autumn harvest</td>
<td>Beginning of Aug. - Middle of Sep.</td>
<td>7</td>
<td>3</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Summer variety</td>
<td>Middle of Jul. - End of Aug.</td>
<td>10</td>
<td>5</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Winter variety</td>
<td>Beginning of Jan. - Beginning of Mar.</td>
<td>9</td>
<td>4</td>
<td>11</td>
<td>9.5</td>
</tr>
<tr>
<td>Potatoes</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>
| 6.3 Prefectural brand products

In addition to the above specially grown agricultural production system, some local authorities are implementing stricter and more credible systems to show consumers high
quality, safe products for increasing their competitiveness in the market.

This is a contract farming system between a farmer group and a cooperative society that agrees not only to control pesticide residue monitoring but also to disclose details about the soil, fertilizer, and pesticide history for establishing a traceability system. The farmer group can show their activities directly to consumers in the marketplace using bar codes and showing farm pictures and cultivation data.

The following are the important components for the establishment of a high quality, safe production system of agricultural products:

- Development and extension of appropriate cultivation methods with reducing pesticides and fertilizers in accordance with the advice of the Agricultural Research Center
- Monitoring pesticide residue system with a quick, inexpensive, sensitive test kit
- Dissemination system of food safety information through a label with analytical data

Extension of technical knowledge in agriculture from local government such as Agricultural Promotion Center and Plant Protection Center to farmer.

Figure 6-5 Sample of prefectural brand product concept
6.4 GAP Guideline

The Ministry of Agriculture, Forestry and Fisheries (MAFF) has set up GAP Guidelines to introduce Food Safety Good Agricultural Practice (GAP) to promote the production of safe agricultural products on farms.

Previously, Japan established GAP focus to reduce risk from pathogenic microbes, such as Farm Sanitation Management Guide for water culture and Sanitation Management Guide for fresh vegetables. In 2004, MAFF set up Food Safety Manual to conduct risk management of agricultural production.

The GAP manual has to be compiled with consideration of the situation of production criteria, the hazards and control points of the cultivation system depending on soil, weather, and other factors. This guideline shows the model and criteria of GAP for future establishment and implementation at each production site.

The Concepts of Food Safety GAP are the following:
1) Increasing awareness about food safety for farmers and involved persons
2) To improve food safety knowledge and technologies through risk management training
3) Necessary items to implement Food Safety GAP
   - To keep the agricultural production environment clean
   - To strengthen sanitation control of agricultural products both at the harvest and post harvest stages
   - To keep a working record
4) To consider environmental conservation as an agricultural environment practice

“Food Safety GAP manual for establishment and extension” (1st edition) has both general and specific parts. In one particular chapter, the manual has crop-wise GAP details for foods such as vegetables, fruits, grains, and mushrooms.
6.5 Recent efforts in the private sector

Recently, in Japan, some private sectors have established their own GAP system for farmer groups that produce agricultural products and serve supermarkets. The following is one farm management system managed by the private sector. The management system developed and introduced a GAP system to a farmer group.

Wagoen was established in 1991 by a group of young farmers who produce vegetables in Chiba prefecture. Since 1998, the group has become the Agricultural Union, Noji Kumiai Hojin. Wagoen has a membership of 90 farmers. In 2005, the farmers handled 40 kinds of vegetables, flowers and eggs. Wagoen products are sold to 50 clients such as co-ops, supermarkets and catering businesses. In 2004, Wagoen total sales were 1,300 million yen.

The Wagoen organizational structure has eight divisions:

1) **Head office**
   Order, cultivation, collection management

2) **Packaging and cutting center**
   Vegetable packaging service for the entire year

3) **Laboratory for cultivation management**
   Pesticide residue analysis by ELISA and Soil analysis

4) **EUREPGAP certified farm**

5) **Recycle center**
   Production of high quality compost and activated water biomass plant to recycle unused resources

6) **Frozen process center**
   Freezing fresh vegetables in a hygienic factory

7) **IT division**
   Direct sales to consumers

8) **Community shop**
   Facilities to promote local production for local consumption
Since 2002, Wagoen has its own production standards and internal audit system under the control of its technical committee. In addition, Wagoen provides training to the farmer membership twice a year.

Wagoen is the first vegetable farm in Japan that received a certified farming practice under the European Union Standards of Good Agricultural Practice (EUREPGAP) for producing *sanchu*, a Korean lettuce.

At present, Wagoen plans to establish Japanese Good Agricultural Practice (JGAP) in accordance with the quality requirement from clients in the Japanese market. The Union considers two basic requirements:
- Quality requirements from consumers
- Safety requirements as production standards

Wagoen can be convinced of the good quality and safety standards of their production to consumers.
7. Recommendation to improve food standards and certification systems in Vietnam

First in this chapter, certification systems in the food chain are reviewed to analyze the component structure and their roles in the system. Second, relations between food certification and credibility for consumers are discussed for the present situation analysis in Japan, Thailand, Malaysia and Vietnam. Finally, future a technical cooperation program is proposed based on the above considerations.

7.1 Certification system in the food chain

Every country has its own food laws and related regulations, and each government formulates basic guidelines to regulate food production management systems and products with a certain safety level.

Recently in Japan, some agricultural producers and food business operators have developed their own certification systems to guarantee both the safety and quality of their products to their customers. Such certification systems are separated into two categories: farm certification and food processing certification. Farm certification includes GAP, organic farming, and specially grown agricultural products, and food-processing certification includes GMP, Organic, HACCP, etc.
To establish certification systems in the food chain, the government needs to support program activities as follows:

a. Development of appropriate cultivation practices for each agricultural product

The guidelines for cultivation practice are only basic ideas for cultivation practices, and each practice depends on the condition of soil, pests, weather, etc. In addition, the best practices have to be designed for each crop production criteria of agricultural research and development issues run by Agricultural Research Center.

b. Extension and training system for officers and farmers

Standards and certification systems need to be developed and training by the government needs to extend to officers. The requirement in the standards and certification system includes teaching programs in farmer schools and universities and the development of public information campaigns for more knowledgeable consumers.

c. Improvement of monitoring systems

Governments may provide laboratory services that are accessible to producers and protect producers against unreasonable fees. They may also stimulate the setting up of local certification offices, providing one or multiple certification services.
d. Improvement of setting standards and certification program

The legal protection of terms associated with organic-type production methods has resulted in governments developing their own organic regulations and becoming standard-setting bodies.

For GAP and organic standards, governmental agencies often take the role of accreditation bodies through which control can be exercised over the quality of certification services.

7.2 Relationship between food certification and credibility for consumers

Figure 7-2 shows the relationship between food certification and credibility for consumers in Japan, Thailand and Vietnam. Each country has its own regulations as prior conditions for their certification systems, but each has a different status of credibility for consumers.

Thailand is a food exporting country, so the primary concern is to increase consumer credibility in the international market. In Japan, farmers and food business operators have to consider the competitive inside market with imported products and show more safety to a health, cost conscious consumer with a strict certification system. However, Vietnamese agriculture is now in a state of transition as it tries to catch up with neighboring countries.
Figure 7-2 Relation map between food certification and credibility
7.3 Concept of technical cooperation program

To strengthen food certification systems in Vietnam, a program of food quality assurance is proposed with components:

1. Strengthen good agricultural practices
2. Strengthen accreditation capacity
3. Establish agricultural information

![Figure 7-3 Concept of technical cooperation program](image)

To establish food certification system, following steps should be needed;
1. The GAP guideline is developed by government (Project 1)
2. Based on the GAP guideline, both PPD and SOFRI develop GAP manual for extension workers (Project 1)
3. Extension workers implement GAP on some model farms by (Project 1)
4. Accreditation capacity of DOA is strengthened, and certification capacity of PPD is strengthened. (Project 2)
5. Agricultural information as a supporting system for GAP is disseminated from DOA that includes food safety regulation and laws in imported countries. (Project 3)
8. **Future candidate projects through technical cooperation**

Based on the concept of technical cooperation program in the previous chapter, three candidate projects are shown in chapter 8.

Before implementing projects, several preliminary studies or preparations are needed by both the Vietnamese side and Japanese side:

1. Implementing agency in Vietnam
   
   In terms of accreditation, STAMEQ of MOST is the responsible agency in Vietnam. Most has much experience in Quality Management Systems (QMS) area.

   However, it is important for implementing a GAP system to know not only the management system but also agricultural knowledge and experiences, so the study team recommended that the implementing agency should be MARD with cooperation of MOST. Some consensus between MARD and MOST on the implementing agency is important.

2. Pilot areas and crops

   In terms of technical cooperation project, to select pilot areas and crops are very important. Not only the purpose of the project but also areas and crops are considered in the preliminary JICA study.

3. Supporting agency in Japan

   In Japan, we have GAP guideline by MAFF, and GAP implementation is promoted by the government. Supporting agencies in Japan have to be considered, the public or private sector.

Three candidate projects:

Project 1. Strengthening good agricultural practices on food safety system in fresh fruits and vegetables.

Project 2. Strengthening the accreditation capacity for an agricultural production certification system.

Project 3. Establishing agricultural information on food safety systems.

References:

- Plant Protection Department (PPD)
- Southern Fruit Research Institute (SOFRI)
- VACVINA
Project 1. Strengthening good agricultural practices (GAP) for food safety systems of fresh fruits and vegetables.

i. Implementing Agency
   Plant Protection Department (PPD) and Southern Fruit Research Institute (SOFRI)
   Ministry of Agriculture and Rural Development (MARD)
   Collaboration with VACVINA (Vietnam Garden Association)

ii. Type of Scheme
    Technical Cooperation Project

iii. Project Area
    Da Lat city

iv. Project Period
    Five years

v. Rationale
    During the renovation, Vietnamese agriculture has gained many achievements in many fields: production development and improvement of farm incomes. Besides these significant achievements, agricultural production still has some constraints and problems. The use of Good Agricultural Practices (GAP) is an important solution for solving problems to improve the quality and safety of agricultural products.

    VACVINA had a GAP presentation in Tsukuba 2005. The presenter showed some constraints in Vietnam agricultural production:
    1. Limited competitiveness of agricultural products in domestic and international markets because of low quality, high cost, few categories, limited safety of foodstuffs and inappropriate standards.
    2. Knowledge standard and occupation skills of farmers are still low and cannot satisfy requirements of production.
    3. Poor infrastructure in rural areas.
Vietnam now has two GAPs for fruit crop production as shown in Table 8-1.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Implementing agency</th>
</tr>
</thead>
</table>
| Farmer training on GAP                                          | - Association of production and marketing of safe fruit in the Tien river region in the Mekong Delta.  
|                                                                 | - VACVINA (Vietnam Gardening Association)                                           |
| Using EUREPGAP standards for monitoring the production of dragon fruit | SOFRI (Southern Fruit Research Institute)                                          |

However, there are some problems for GAP implementation in Vietnam.
- Farmer awareness of safety production remains low.
- Farm sizes are small, and farms are scattered.
- Lack of national sanitary and phytosanitary standards and instructions for IPM and ICM of fruits and vegetables.

vi. **Overall Goal**
Farmers need to recognize good food safety agricultural practices.

vii. **Project Purpose**
Production systems for agricultural product standards such as GAP are improved and control systems related to food safety, and they are strengthened through farmer training by extension officers.

viii. **Output**
The development of good agricultural practice (GAP) manuals for several crops. GAP training manuals are developed for extension officer. The development of appropriate system for GAP production and implementation of quality control systems at farms.

ix. **Activities**
- Baseline study on the GAP implementation system to select crops in Da Lat
- Training based on GAP manual for extension officers
- Implementation of models for some group growers in the study area
- Evaluation of the GAP implementation during the period
x. **Inputs from Japan**
- Dispatch long-term experts: Appropriate agricultural production (1) and agricultural extension (1)
- Dispatch short-term experts: Production training and (2) and training program (2)

xi. **Expected Benefits**
- Improve farmer abilities and productivity
- Food industry can purchase safe raw material for ingredients
- Increase farmer awareness of food safety and environment
Project 2. Strengthening the accreditation capacity in agricultural production certification systems

i. Implementing Agency
   Department of Agriculture (DOA)
   Ministry of Agriculture and Rural Development (MARD)

ii. Type of Scheme
    Technical Cooperation Project

iii. Project Area
    Hanoi

iv. Project Period
    Three years

v. Rationale
   In Vietnam, the Vietnam Accreditation Bureau of Ministry of Science and Technology (MOST) is generally responsible for the accreditation system, and accredits certification bodies as third parties. However, because of governmental regulations, some parts of GMP and HACCP are directly certified by MOH or MOFI. (See Table 8-2)

   Now, Vietnam does not yet have a governmental GAP certification system though some farmers are EUREPGAP certified by international third parties.

   The two options for a certification body are Quacert or MARD’s DOA. These options could be considered the same as GMP and HACCP certifications.

   In terms of GAP certification, it includes not only document work for auditing but also technical knowledge and experience for agricultural production.

   In this project, MARD’s DOA will work as a certification body in collaboration with MOST in that MOST has had numerous experiences with certification.
Table 8-2 Accreditation and certification systems for the food sector in Vietnam

<table>
<thead>
<tr>
<th>Accreditation body</th>
<th>Existing</th>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam accreditation Bureau (MOST)</td>
<td>---</td>
<td>?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Certification Body</th>
<th>MOH FA</th>
<th>MOFI Nafiquacen</th>
<th>Quacert &amp; 3rd parties</th>
<th>MARD DOA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Client</th>
<th>Food companies</th>
<th>Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>GMP</td>
<td>HACCP</td>
</tr>
<tr>
<td>GMP</td>
<td>GAP</td>
<td></td>
</tr>
<tr>
<td>HACCP (Fishery)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

vi. **Overall Goal**
Accreditation capacity of DOA on production system certification is internationally recognized, and the production system (GAP/Organic) has been upgraded and the external agricultural product trade procedure is facilitated.

vii. **Project Purpose**
Setting up the Accreditation Agency and its capacity on agricultural production system in MARD (Primary Production (GAP) for fresh fruit and vegetable products) to international level cooperate with Directorate for Standards and Quality (STAMEQ) of Ministry of Science and Technology (MOST).

viii. **Output**
- Human resources required for accreditation activities are developed in DOA
- Information dissemination and training system are established.

ix. **Activities**
- To review the domestic and international guidelines/standards for accreditation
- To develop GAP accreditation guideline in Vietnam
- To develop training program for certification body on GAP

x. **Inputs from Japan**
- Dispatch long-term expert: Accreditation process management (1)
- Dispatch short-term experts: Experts on GAP, Organic, project monitoring

xi. **Expected Benefits**
Accreditation capacity of DOA is upgraded, and internationally recognized. Certification of Agricultural production system (GAP) is strengthened.
**Project 3. Establishing agricultural information system of food safety**

i. **Implementing Agency**
   Department of Agriculture (DOA)
   Ministry of Agriculture and Rural Development (MARD)

ii. **Type of Scheme**
   Technical cooperation project

iii. **Project Area**
   Hanoi

iv. **Project Period**
   Three years

v. **Rationale**
   Food safety and related issues are involved in many ministries such as the Ministry of Agriculture and Rural Development (MARD), Ministry of Health (MOH), Ministry of Science and Technology (MOST), Ministry of Fisheries (MOFI) and Ministry of Industry (MOI). Each ministry has its own information website and each publishes separately from its point of view. Based on the above information, standards and regulations of major importing countries are insufficiently available for the food sector, especially newly revised food regulations and standards.

   MARD had set-up a project for Information Technology in the agricultural sector, included in the National Information Technology Program. The project consists of two information system: information system I and information system II. Information system I is used for administrative management, and information system II is used for production management.

   The development of the Information Center is to ensure that all relevant information is collected and classified as food standards and regulations of importing and competitive countries.

   Not only the agricultural sector and exporters but also consumers can be informed about the quality and standards of imported food. Such knowledge would lead to
the future public awareness in food safety. Furthermore, information would effectively encourage improvement in the food and agricultural sector.

vi. **Overall Goal**
Agricultural market requirements and GAP practice should be recognized and accepted by consumers, domestically and internationally.

vii. **Project Purpose**
Establishment of an accessible database of agricultural information on food safety system, such as Codex Alimentarius as international standards, food laws and regulations in other countries as importing country’s standards.

viii. **Output**
The MARD Information Center can provide updated information on food and food safety.
Human resources required for information dissemination activities are developed.

ix. **Activities**
- To collect available information and documents with classification
- To design database system and develop website
- To develop maintenance system for database
- To train system engineer for database system development and maintenance
- To have some seminars to announce the system to the public and private sector

x. **Inputs from Japan**
- Dispatch long-term expert: Food safety information management (1) and database management (1)
- Dispatch short-term experts: Database management training (1)
- 

xi. **Expected Benefits**
- Improve MARD officer capabilities for developing information systems
- Food business operators can access more information on the MARD database
References for candidate projects

Plant Protection Department

The Plant Protection Department is under the Ministry of Agriculture and Rural Development. Figure 8-1 shows the organizational chart.

Figure 8-1 Organization chart for the Plant Protection Department
SOFRI : Southern Fruit Research Institute

Background

Southern Fruit Research Institute (SOFRI) was upgraded under decision No. 1056/1997/QDTTg on December 9, 1997, from Long Dinh Fruit Research Center (LDFRC) by the Ministry of Agriculture and Rural Development.

SOFRI is located at the Long Dinh commune, Chau Thanh district in the Tien Gian province. The location is about 75 km to the west of Ho Chi Minh city.

R & D Targets

- To improve fruit cultivars for better yield, and high quality for local consumption, processing and export.
- To improve the technology of fruit tree propagation, farming, as well as protection for high yield and quality fruit products.
- To develop farmer-oriented handling, processing and marketing techniques for fruit products.

Divisions and Responsibilities

<table>
<thead>
<tr>
<th>Division of Fruit Breeding and Selection</th>
<th>Division of Biotechnology</th>
</tr>
</thead>
<tbody>
<tr>
<td>- To collect local varieties and introduce new varieties for fruit germplasm conservation and evaluation</td>
<td>- To conduct applied biotechnological research for fruit improvement, genetic conservation, micro-propagation by tissue culture, disease-free seedlings, mutation study (papayas, bananas, pineapples, citrus fruits, and mangos)</td>
</tr>
<tr>
<td>- To select outstanding fruit clones for clonal improvement and further breeding and selection</td>
<td></td>
</tr>
<tr>
<td>- To conduct trials on various biological zones of selected scions and rootstock</td>
<td></td>
</tr>
<tr>
<td>- To propagate seeds of released rootstocks and budsticks of scion cultivars</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division of Plant Protection</th>
<th>Division of Agronomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>- To study all aspects of the most important targeted pests and diseases such as development, damage, hosts, biology for fruit integrated management, including chemical and biological control, culturing control and resistant cultivars.</td>
<td>- To do research in plant nutrition, soil fertility for farming management including fertilization, water management, weed control for orchard integrated management to achieve sustainable and economic fruit cultivation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division of Post Harvest Technology</th>
<th>Division of Fruit Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>- To study some visible technology of post harvest phase of fruit cultivars in the South VN in order to reduce damages and losses for better yield and higher quality</td>
<td>- To study optional approaches for implementing reforms on non-economic and unplanned orchards in the southern provinces</td>
</tr>
<tr>
<td>- To prolong shelf-life storage of some major tropical fruits</td>
<td>- To study fruit markets, fruit market information, fruit marketing issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group of Vegetables &amp; Ornamental Plants</th>
<th>Center of Technical transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>- To investigate problems of some vegetable crops in the south (tomatoes, chili, eggplant, bitter guard). Yield trial</td>
<td>- To transfer the advanced technique on fruit trees to farms and technicians of the province by training workshop on horticultural techniques, important disease control and insects on fruit.</td>
</tr>
<tr>
<td>- To survey on chemical residue on some vegetables</td>
<td></td>
</tr>
<tr>
<td>- To study flower with the efficace of environment and economic.</td>
<td></td>
</tr>
</tbody>
</table>
VACVINA

Principles and Goals
The Vietnam Gardening Association (VACVINA) was established on 13 January 1986 as a Non-Government Organization (NGO) in accordance with Government Decision No 31/BT of 22 February 1986.

VACVINA is a public, socio-economic and professional organization that operates on a voluntary, cooperative basis for mutual assistance in economic developments in VAC (VAC is an acronym formed from three Vietnamese words: vuon, garden or orchard, ao, fish pond and chuong, animal shed).

VACVINA has a nation-wide operation with headquarters in Hanoi. There are two Representative Offices in the south (Ho Chi Minh city) and the central part of Vietnam (Phu Yen province).

Mandate
1. To disseminate and cascade governmental views, guidance, policies, laws and regulations concerning the VAC model for farm households and small scale farms for environmental protection and sustainable agriculture development.

2. To further strengthen VACVINA to be a consistently better established Association. To encourage VACVINA’s membership to become more enthusiastic, take more initiative, and become more mutually collaborative to develop their skills in VAC. To facilitate VACVINA membership to become mutually helpful to one another on loan provision, labor force, and other resources in the production, storage, processing and marketing of finished products.

3. To disseminate experience and technical transfer on VAC, organizing the distribution services of nursery plants and other technical materials, product processing and consumption. To publish necessary printing materials for technical dissemination, economic management, and training on VAC.

4. To widen international cooperation with various related international organizations and individuals for sharing experience on business, production, and transfer of new techniques to VACVINA members and farmers.

5. To participate in providing consulting services and justification on socio-economic
strategies within the remits of VACVINA.

**Organization**

VACVINA is set up and operated as a voluntary and self-funded organization.

There are 700,000 members and 61 VACVINA Branches in 61 provinces/cities in Vietnam.

- VACVINA Headquarter (HQ)
- VACVINA provincial
- VACVINA district
- VACVINA commune

VACVINA highest management authority is the National VACVINA Member Congress (five-year term).

The Standing Committee was voted by the VACVINA HQ Committee, which includes: President, vice presidents and standing committee members responsible for operational management of VACVINA on a regular basis.

VACVINA Congress is to be held every five years in VACVINA provinces and districts.

**VACVINA HQ has twelve units under direct control:**

1. Center for Training & Transferring VAC Technique in Highland. Office in Thai Nguyen City.
2. Center of Research & Development of Clean Agriculture (CRDCE). Office in Can Tho City
3. Advising & Supporting Center for Agriculture and Rural Development (ASCARD). Office in Ho Chi Minh city.
4. Center for Information, Consultancy Economic Development Promotion (VACEP)
5. VACVINA Special Aquatic Produce Center (SAPC)
6. The Center for Rural Progress (CRP)
7. Center for Training and Transferring of VAC Technology (CCT-VACVINA)
8. Center for Rural Community and Development (CCRD)
9. Action United for Local Assistance Center (AULAC)
10. Kinh Bac Scientific and Technological Union (STUKB)
11. Rural Economic Newspaper
12. Centre for Communication & Supportive Services for Laborers
Achievements:
Building up various typical models of VAC, demonstrations and pilot schemes for biogas technology and organic farming via locally/internationally funded programmes under VACVINA's direct supervision. Fifty pilot schemes were established financial supports from the government or other international organizations. During 2003-2005, 500ha of fruit trees of good quality were established in seven agro-ecological regions.

Establishing 80,000 ha of orchards for the poor and people with disabilities during 1998-2004.

Technical transfer & training for VACVINA members and extension officers (over 50,000 people/year).

Launching campaigns on horticultural rehabilitation to be conducted on 70-85% of barren horticultural land (until 2003) for VAC development for poverty alleviation.

Providing supportive services on economic farming developments. Throughout Vietnam until 2003, there were 60,000 farms, recruiting approximately 400,000 direct laborers who generated over VND 5,000 billion per annum. Every year, there are 5-6 farming seminars held on relevant themes.

International cooperation:
VACVINA has relationships with numerous International Organizations and Institutions such as UNICEF, Quaker Service Australia, AUSAID, FAO, CARE, Terra Orient (Finland), ActionAid International Vietnam, ActionAid Australia, SEACON (Malaysia), IIRR (Philippine), ANGOC (Philippine) Konrad Adenauer, TOYOTA fund, CIRAD-FLHOR; IRRI, ACIAR, NCHU, and NTU to conduct development programmes on rural agriculture, research/experience exchanges, conferences, workshops, and intensive-training courses for VACVINA staff/members, conferences, shared experience meetings, and training courses.
Appendix

Appendix 1  Schedule for Field Investigation
Appendix 2  Major Interviewees
Appendix 3  Definitions in standards and certification
Appendix 4  Table Candidate projects profile for technical cooperation on strengthening food certification system in Vietnam
Appendix 5  References

Photo 1   Food markets in Hanoi
Photo 2   Food processing company in Hung yen
Photo 3   Farms in Da Lat
## Appendix 1

### Schedule for Field Investigation

**<Field Investigation>**

1.

<table>
<thead>
<tr>
<th>Days</th>
<th>Date</th>
<th>Week</th>
<th>From</th>
<th>By</th>
<th>To</th>
<th>Activities</th>
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<tr>
<td>1</td>
<td>2005.9.14</td>
<td>Wed</td>
<td>Tokyo</td>
<td>Air</td>
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<td>Departure, Meeting with Dr. Chantaree</td>
</tr>
<tr>
<td>2</td>
<td>2005.9.15</td>
<td>Thu</td>
<td>Bangkok</td>
<td>Land</td>
<td>Kanchanaburi</td>
<td>Visit River Kwai company</td>
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<tr>
<td>3</td>
<td>2005.9.16</td>
<td>Fri</td>
<td>Kanchanaburi</td>
<td>Land</td>
<td>Bangkok</td>
<td>Mahidol Universit, National Bureau of Agricultural Commodity and Food Standards(ACFS) of Ministry of Agricultural and Cooperatives (MOAC)</td>
</tr>
<tr>
<td>4</td>
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2.

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<th>Days</th>
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<td>3</td>
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<tr>
<td>Days</td>
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<td>Week</td>
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<td>Hanoi</td>
<td>Air Ho Chi Minh</td>
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<td>8</td>
<td>2005.9.25</td>
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<td>Air Ho Chi Minh</td>
<td>JICA(HCM), Post Harvest Technology Center : OMIC HCM Office : FCC Control and Fumigation Company</td>
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<td>Ho Chi Minh</td>
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<td>Ho Chi Minh</td>
<td>Land Tien Giang</td>
<td>Southern Fruit Research Institute(SOFRI) : Hoang Hau Dragon Fruit Farm</td>
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<td>11</td>
<td>2005.9.28</td>
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<td>Land Bin Duong Da Lat</td>
<td>HACCP/ISO22000 Workshop</td>
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<td>12</td>
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<td>Da Lat</td>
<td>Land Ho Chi Minh</td>
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<td>13</td>
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<td>Ho Chi Minh</td>
<td>Ministry of Science and Technology</td>
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<td>14</td>
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<td>Air Bangkok</td>
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3.

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<td>Air</td>
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   Mr.Nagaoka (2005.9.18) Tokyo - Hanoi (2005.10.1) Ho Chi Minh - Tokyo
3. Mr.Ueno (2005.10.2 - 10.4)
## Major Interviewees

### Government

<table>
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<tr>
<td>Ministry of Agriculture and Rural Development, International Cooperation</td>
<td>Ms. Hoang Thi Dzung (Deputy Director General)</td>
</tr>
<tr>
<td></td>
<td>Ms. Dao Thi Loc (Program manager)</td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Development, Plant Protection Department (Hanoi)</td>
<td>Mr. Hoang Trung (Plant Quarantine Division)</td>
</tr>
<tr>
<td>Ministry of Health, Food Administration</td>
<td>Mr. Chu Quoc Lape (Deputy Director)</td>
</tr>
<tr>
<td></td>
<td>Mr. Nguyen Huu Dung (Vice Head of Integration and Development Division)</td>
</tr>
<tr>
<td>Ministry of Fisheries, Directorate for Fisheries Quality and Veterinary</td>
<td>Mr. Nguyen Nitu Tiep (Head of Aquatic Animal Health)</td>
</tr>
<tr>
<td>Ministry of Science Technology, Directorate of Standards and Quality</td>
<td>Mr. Nguyen Van Xuan (Manager of Department on Food and Agriculture Products)</td>
</tr>
<tr>
<td></td>
<td>Mr. Tran Van Vinh (Chief Executive)</td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Development, Department of Agricultural</td>
<td>Mr. Truong Hop Tac (Soil and Fertilizer Division)</td>
</tr>
<tr>
<td></td>
<td>Mr. Tran Quang Chieu (Responsible for International Cooperation)</td>
</tr>
<tr>
<td></td>
<td>Mr. Pham Van Duy (Bureau of Labeling)</td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Development, Plant Protection Department (HCM)</td>
<td>Mr. Nguyen The Phu (Deputy General Director)</td>
</tr>
<tr>
<td></td>
<td>Mr. Phan Van Tuong (Director of Pesticide Control Center)</td>
</tr>
<tr>
<td></td>
<td>Mr. Nguyen Huu Dat (Vice Director, Post Entry Quarantine Center)</td>
</tr>
<tr>
<td>Ministry of Science and Technology</td>
<td>Mr. Bui Van Quyen (Head of Southern Rep. Office)</td>
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### International Organization

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<td>Food and Agriculture Organization of The United Nations</td>
<td>Mr. Trinh Duy Hung (Administrative Assistant)</td>
</tr>
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### <Institute>

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<td>Food Industries Research Institute (FIRI)</td>
<td>Mr. Konno (JICA Project Coordinator)</td>
</tr>
<tr>
<td>Hanoi Agricultural University, Center for</td>
<td>Mr. Nguyen Van Trung (Director)</td>
</tr>
<tr>
<td>Practice and Technological Training and</td>
<td>Mr. Nguyen Dinh Thi (Vice Manager)</td>
</tr>
<tr>
<td>Agricultural Production</td>
<td></td>
</tr>
<tr>
<td>Post Harvest Technology Center</td>
<td>Dr. Le Van To (Director)</td>
</tr>
<tr>
<td>Southern Fruit Research Institute (SOFRI)</td>
<td>Mr. Nguyen Van Hoa (Head, Plant Protection Division)</td>
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</tbody>
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### <Private>

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<tr>
<td>Vietnam Gardening Association (VACVINA)</td>
<td>Mr. Ha Minh Trung (Project Director)</td>
</tr>
<tr>
<td></td>
<td>Mr. Ngo The Dan (Vice Chairman of Vacvina)</td>
</tr>
<tr>
<td>Trang Tien Ice cream company</td>
<td>Mr. Nguyen Van Hai (President)</td>
</tr>
<tr>
<td>Northern Kinhdo Food Joint Stock Co.,</td>
<td>Mr. Nguyen Quang Hung (Chief of QA)</td>
</tr>
<tr>
<td>Hoang Hau Dragon Fruit Farm</td>
<td>Mr. Tran Ngoc Hiep</td>
</tr>
<tr>
<td>Vegetables Farm</td>
<td>Mr. Tran Duc Quang</td>
</tr>
</tbody>
</table>
Appendix 3

Definitions in standards and certification

Following are the definitions of frequency use words for standards and certification in this report:

**Accreditation**
Procedure by which an authoritative body gives formal recognition of the competence of a certification body to provide certification services, against an international standard

**Accreditation body**
Agency having jurisdiction to formally recognize the competence of a certification body to provide certification services

**Audit**
Systematic and functionally independent examination to determine whether activities and related results comply with a conforming scheme, whereby all the elements of this scheme should be covered by reviewing the suppliers’ manual and related procedures, together with an evaluation of the production facilities

**Auditor**
Person qualified to carry out audits for or on behalf of a certification body

**Benchmark**
Procedure by which a food safety-related scheme is compared to the GFSI Guidance Document

**Certification**
Procedure by which accredited certification bodies, based on an audit, provide written or equivalent assurance that food safety management systems and their implementation conform to requirements

**Certification body**
Provider of certification services, accredited to do so by an accreditation body

**Standards**
Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions, to ensure that materials, products, processes and services are fit for their purposes (ISO)
i. Product standards: specification and criteria for the characteristics of products

ii. Process standards: criteria for the way the products are made
   - Management system standards: set criteria for management procedures, i.e. for documentation or for monitoring and evaluation procedures
   - Performance standards: set verifiable requirements for factors such as the non-use of certain pesticides, or the availability of sanitary services

Source: Global Food Safety Initiative (GFSI)
### Table  Candidate projects profile for technical cooperation on strengthening food certification system in Vietnam

<table>
<thead>
<tr>
<th>Project</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
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</thead>
<tbody>
<tr>
<td><strong>Project name</strong></td>
<td>Strengthening good agricultural practices (GAP) on food safety system in fresh fruit and vegetables</td>
<td>Strengthening the accreditation capacity on agricultural production certification system</td>
<td>Establishing agricultural information system on food safety</td>
</tr>
<tr>
<td><strong>Implementation agency</strong></td>
<td>Plant Projection Department (PPD) and Southern Fruit Research Institute (SOFRI) Ministry of Agriculture and Rural Development (MARD) Collaboration with VACVINA (Vietnam Garden Association)</td>
<td>Department of Agriculture (DOA) Ministry of Agriculture and Rural Development (MARD)</td>
<td>Department of Agriculture (DOA) Ministry of Agriculture and Rural Development (MARD)</td>
</tr>
<tr>
<td><strong>Project area</strong></td>
<td>Da Lat city</td>
<td>Hanoi</td>
<td>Hanoi</td>
</tr>
<tr>
<td><strong>Project period</strong></td>
<td>Five years</td>
<td>Three years</td>
<td>Three years</td>
</tr>
<tr>
<td><strong>Overall Goal</strong></td>
<td>Farmer should recognize good agricultural practices for food safety.</td>
<td>Accreditation capacity of DOA on production system certification is internationally recognized, and the production system (GAP/Organic) is upgraded and the external agricultural product trade procedure is facilitated.</td>
<td>Agricultural market requirements and GAP practice should be recognized and accepted by consumer domestically and internationally.</td>
</tr>
<tr>
<td><strong>Project purpose</strong></td>
<td>Production systems on agricultural product standards such as GAP are improved and control system related to food safety is strengthened through farmer training by extension officers.</td>
<td>Setting up Accreditation Agency and its capacity on agricultural production system in MARD (Primary Production (GAP) for fresh fruit &amp; vegetables products) to international level cooperate with Directorate for Standards and Quality (STAMEQ) of Ministry of Science and Technology (MOST).</td>
<td>Establishment of accessible database of agricultural information on food safety system, such as Codex Alimentarius as international standards and food laws and regulations in other countries as importing country's standards.</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>Development of good agricultural practice (GAP) manual for several crops. GAP training manuals are developed for extension officer. Appropriate system for GAP production and implementation of quality control system at farm are developed.</td>
<td>Human resources required for accreditation activities are developed in DOA. Information dissemination and training system are established.</td>
<td>Information center in MARD can provide updated information on food and food safety. Human resources required for information dissemination activities are developed.</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>Baseline study on the GAP implementation system to select crops in Da Lat. Training based on GAP manual for extension officer Implementation of models for some group growers in the study area Evaluation of the GAP implementation during the period</td>
<td>To review the domestic and international guidelines/standards for accreditation To develop GAP accreditation guideline in Vietnam To develop training program for certification body on GAP</td>
<td>To collect available information and documents with classification To design database system and develop website To develop maintenance system for database To train system engineer for database system development and maintenance To have some seminar to announce the system to public and private sector</td>
</tr>
<tr>
<td><strong>Input from Japan</strong></td>
<td>Dispatch long-term experts: Appropriate agricultural production (1) and agricultural extension (1) Dispatch short-term experts: Production training (2), Training program (2)</td>
<td>Dispatch long-term expert: Accreditation process management (1) Dispatch short-term experts: Experts on GAP, Organic, project monitoring</td>
<td>Dispatch long-term expert: Food safety information management (1) and database management (1) Dispatch short-term experts: Database management training (1)</td>
</tr>
<tr>
<td><strong>Expected benefits</strong></td>
<td>Improve farmer capability and productivity Food industry can purchase safe raw material for ingredient Increase awareness of food safety and environment for farmers</td>
<td>Accreditation capacity of DOA is upgraded, and internationally recognized. Certification of Agricultural production system (GAP) is strengthened.</td>
<td>Improve MARD officer capability for developing information system Food business operators can access more information on MARD database</td>
</tr>
</tbody>
</table>
References

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* http://www.food-care.info/index.php
* http://www.moh.gov.vn/tinbyt/
* http://www.quacert.gov.vn/
* http://www.sqfi.com/
* http://www.vsc.org.vn/
* http://www.wagoen.com/shizen.html
* http://vietnamnet.vn/
Food markets in Hanoi

Open market in Hanoi: AM PHW MARKET

Vegetables sold in an open market

Meet in a display stand without refrigeration facilities sold in an open market

Food in the city supermarket in Hanoi

Vegetables sold in a supermarket

Fruits sold in a supermarket

Health Certificate for meet Products

Frozen Food in a supermarket
(Frozen shrimp produced in the factory certificated ISO9001)
Food Processing Company in Hung yen

Head Office and Food Factory
(About one thousand employee working in a factory)

Main Products (confectionery)

Production area (1)

Production area (2)

Production area (3)

Inventroy warehouse

(Name of company: NORTHERN KINHDO FOOD JOINT STOCK Co)
**Farms in Da Lat**

**Dragon Fruit Farm in Da Lat**

- Dragon Fruit Trees
- Work on sorting
- Cardboard for shipment
  (Only small small size can be exported to Europe)

**Vegetables Farm (Greenhouse) in Da Lat**

- Cultivate a lettuce, green and yellow pepper etc only for domestic market.
- Cultivation area is 5ha.

- Vegetables farm (Greenhouse) (1)
- Vegetables farm (Greenhouse) (2)
- Harvesting work (2)
ベトナムにおける
食品の基準・認証システムの強化のための調査

和文要約
ベトナムにおける食品の基準・認証システムの強化のための調査

1. はじめに
調査の背景
食品は、世界中の国民が健全な社会生活を送るためにもっとも重要なものである。以前は、輸送や貯蔵手段が十分でないために生産された場所での消費のみであったが、食のグローバル化や社会経済の発展に伴い、生産地と消費地の距離がますます拡大している。

近年、食をめぐる様々な問題、例えば鳥インフルエンザや牛の BSE、輸入野菜における残留農薬汚染、食品表示偽装問題などが起こっており、消費者の食品に対する信頼が揺らいでいる中で、生産者と消費者の距離拡大の問題は、技術的のみならず社会的な問題である。

消費者は、市場にある食品の外見や表示を見て、その良し悪しを判断することになるが、農林水産省が2004年に行った消費者意識調査によると野菜購入に際して消費者がもっとも重要視するのは、「生産地」「安全への認証」「出荷日」が80%以上、栽培方法や農薬使用などが60%以上となっている。つまり、食品の認証システムは、消費者が食品の品質や安全性を確認するために重要な役割を果たしていることが分かる。

食品の認証システム
食品の認証は、生産者が製品の品質や安全性が、顧客の要求を満たしているかどうかを確実にするもので、生産物や製造工程（マネジメント）人がその認証の対象となる。
認証のレベルによって、次の3つの認証の仕組みがある。製造者が自身を認証する自者認証、PB商品など販売者と購入者の間の第三者認証、それ以外の独立した組織が認証する第三者認証がある。

食品事業者が、その製品の安全性を顧客に示すために第三者による品質保証システムのような認証を取得し、製造だけでなく食品流通全体でリスクを削減していることを示すことが、益々重要となってきている。
食品の製造や流通段階で、安全な食品であることをシステムとして保証する適正農業規範（GAP）や危害分析重要管理点システム（HACCP）などの認証システムの導入が進んでいるが、それが国際的な要求を満たすことが必要となることもあり、国によっては、技術面、制度面、人材育成の面から推進の障害になっている。

食品は、農産物から水産、畜産またそれぞれの加工品に至るまで、非常に幅が広く、又原材料から加工品まで多岐に渡ることから、ここでは、現在最も重要であり、又注目されている食品原材料としての農産物（野菜や果物）の基準と認証に焦点をあてることとする。

日本には、有機農産物や特別栽培農産物など表示制度を中心とした仕組みやHACCP認証制度、各地方自治体の農産物ブランド戦略、小売店のPB商品認証などがある。また、ヨーロッパには、小売店の組合が中心となって、各種基準・認証システムの評価を行いより有効で相互に承認可能な認証システムの検証が進んでいる。（欧米の例を紹介するのは、欧米国内での基準認証だけでなく、輸入国として遵守すべき認証システムを知るために意味がある）

タイやマレーシアは、食品・農産物の輸出国として、自国の食品認証システムを構築中であると同時に、欧米への輸出のために多くの民間企業が輸入国やその顧客の要求を満足するために多くのコストを掛けて認証の取得を行っている。

ベトナムの食品産業は、農業経営者を含めて小規模なところが多いが、品質と生産向上のために急激な技術革新がなされているが、農産物や食品の認証においては、これから周辺国の技術や情報を取り入れて、高品質で安全な食品の生産のため認証システムの構築が待
たれている。しかし、農家への GAP 導入や製造工場への HACCP 導入が進み始めたばかりで、制度面・人材育成の面で多くの課題を抱えている。

日本でも農産物の安全性強化や将来の海外輸出のための HACCP や GAP の導入を図っており、また国内での国産品や輸入品との競合のためトレーサビリティシステムなども含めて官民をあけて取り組んでいる。日本の例やタイ、マレーシア、オーストラリアの例も参考にして、ベトナムにおける安全な食品の供給や消費のための認証システムの構築支援を検討する。

調査の範囲
以下の内容についての情報収集、分析を行い、プロジェクトの形成とその実施のための提案をする。
・ 日本、ベトナム、他のアジアの国々の食品の基準・認証システムの現状と問題分析
・ 農業生産から市場流通に至るまでの各種制約条件の分析（政策、認証システム、農家
  の意識など）
・ 上記を踏まえてベトナムの農業・食品分野において、人材育成を中心とした技術協力
  プロジェクトの形成

ベトナムでの調査地域
ベトナムでは、ハノイとホーチミンの 2 箇所を中心とするが、これは、食品政策や行政機
関、民間セクターの活動に関与したポテンシャルのあるところを選択し、農産物の生産や
研究機関など見詰めのため Binh Duong, Tien Giang, Da Lat なども訪問した。

調査スケジュール
ベトナムでは、2005 年 9 月 18 日から 10 月 1 日までハノイ地域とホーチミン地域を各 1 週間訪問し、現地調査を行った。
タイには、ベトナムの前後に 9 月 14 日から 9 月 18 日と 10 月 2 日から 10 月 5 日まで、認
証に関係する情報収集を行った。

調査団構成

<table>
<thead>
<tr>
<th>番号</th>
<th>氏名</th>
<th>担当</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>上野一美</td>
<td>食品安全システム</td>
</tr>
<tr>
<td>2</td>
<td>チャンテー・ジャルバンナ史</td>
<td>農産物認証システム</td>
</tr>
<tr>
<td>3</td>
<td>長岡浩一</td>
<td>人材育成</td>
</tr>
</tbody>
</table>
2. ベトナム概要
ベトナム社会主義共和国は、東南アジアに位置し、北は中国、西はラオスとカンボジア、南は南シナ海及び太平洋に接している。2004年の人口は、8,200万人で年間の人口増加率は約1.4%である。1986年のドイモイ政策以後、市場経済の導入により、都市部の雇用や収入増から、地方よりも都市部に急速に人口が増加し、また民間のビジネスや海外からの投資も増加している。

2004年のベトナムのGDPは449億米ドルで、セクター別では、農業21.8%、工業19.8%、製造業20.3%、サービス業21.8%となっているが、農業労働人口は、66.1%（2002年）となっている。米は、2002年の輸出額の4.3%を占め、世界の第2位の輸出国となっている。それ以外の主な作物は、コーヒー、ギャ、ピーナッツ、ゴム、サトウキビ、茶である。製造業の20.3%（2004年）、労働者の12.7%を占めており、主なセクターは食品加工、タバコ、繊維、電気製品であり、急速に伸びている分野である。

2004年のベトナムへの輸入額は、320億ドルで、機械・部品（27.0%）燃料（68.0%）消費財（5.0%）などが、中国、シンガポール、日本、韓国などから輸入されている。また、輸出額は、265億ドルで、軽工業（41.2%）重工業（32.6%）農林産物（17.1%）水産物（9.1%）で、主に米国、日本、中国などに輸出している。

3. ベトナムの食品・農業セクターの現状
ベトナムの農業生産は急速に拡大してきたが、2003年から現在まで続く鳥インフルエンザが、GDPにおける農業のシェア減少に大きく影響しているが、現在のところ水産物は農水産物輸出額の45%を占めている。

また、ベトナム政府は2001年以降、農業セクターの工業化・現代化の活動計画を導入し、市場開放のための農業分野におけるアセアン協力を含めた多くの活動を実施しており、2006年にはWTO加盟を目指している。

市場における加工食品の品質向上のために高品質マーカの制度を設けるなどの努力をしているが、保健省の調査資料によれば、食中毒などの多くの事故が発生している。生産野菜の大腸菌汚染や食品添加物の規制違反、豆類のアフラトキシン汚染などの問題がある。

食品安全管理体制は、1999年に保健省の下に食品局が設立され、食品安全行政の管理を行っており、品目や段階によって下表のように各省がそれぞれ役割をもっているが、相互の連携が十分でないことが問題となっている。
ベトナム政府の食品マネジメントシステム

<table>
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<th>省</th>
<th>局</th>
<th>機能</th>
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<tbody>
<tr>
<td>科学技術省</td>
<td>基準品質局</td>
<td>食品の基準作成</td>
<td></td>
</tr>
<tr>
<td>農業農村開発省</td>
<td>植物保護局他</td>
<td>動物・農産物の生産段階の管理</td>
<td></td>
</tr>
<tr>
<td>保健省</td>
<td>食品局</td>
<td>流通後の食品、加工品、輸入品の管理</td>
<td></td>
</tr>
<tr>
<td>水産省</td>
<td>水産品質検査局</td>
<td>水産物（輸出含む）の管理</td>
<td></td>
</tr>
<tr>
<td>貿易省</td>
<td>マーケット管理局</td>
<td>輸出入への助言</td>
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</table>

科学技術省の基準品質局は、食品を含む製品の基準作成や品質管理を行っており、ベトナム国家基準 (TCVN) の作成と管理をしているが、それ以外の食品に関する基準としては、各省が独自に作成している基準（農業農村開発省：残留農薬基準など、保健省：食品表示基準など）や企業独自の生産や品質管理のための基準がある。

科学技術省にベトナム認定局があり、第三者機関としての認証機関の認定を行っているが、一部の食品企業の GMP や HACCP などは、保健省や水産省が独自の認証を行っている。最近、政府の科学技術省傘下の認証機関 QUACERT が、民間と共同で HACCP、ISO22000 の研修を行っており、また将来農家に対して GAP の認証を行う計画もある。

農業は、ベトナムの経済にとって非常に重要な分野であるが、現在のところ農業生産性の向上や高付加価値化に重点が置かれ、安全性や品質保証についてはこれからというところである。

ベトナムの農業が抱えている問題は、農薬や化学肥料などに対する対応、農家において製品の品質や衛生面での意識付け、野菜や果物の収穫後損失などであり、種々の取組がなされている。

農業農村開発省：米生産における「省農薬、省肥料、省種子による高収量、高品質、高利益」プロジェクト
ハノイ農業大学：グリーン野菜生産のための農家や行政職員への研修
南果樹研究所（SOFRI）：オーストラリア政府の支援によるドラゴンフルーツ GAP プロジェクト
４．アジア諸国における食品の基準と認証システム
＜ケーススタディ 1 タイ＞
食品の輸出国としてのタイは、農業協同組合省の傘下に国家農産物・食品基準局（ACFS）を設置し、食品の基準を作成すると共に、HACCP や GMP、GAP、有機農産物などの認証機関や各種分析機関に対する認定を与える機能を導入している。
また、農業協同組合省は、農産物や食品の品質を認証する仕組みとして Q マークを設定しており、農業資材から製造段階までを検査・認証して、農家や製造業者に対して、Q マーク認証を与えている。
農業協同組合省は、輸出向けの海外市場を対象として認証システムを構築しているが、保健省は、国内で流通する加工品を中心として、工場の GMP や HACCP の認証により管理と監視を行っている。

＜ケーススタディ 2 マレーシア＞
1999年にマレーシア政府は、食品安全活動計画を策定し、マレーシア農業研究開発機関（MARDI）が責任機関として、農家レベルの GAP を開発し、農業局（DOA）が農業適正規範（SALM）、畜産局（DVS）が畜産適正規範（SALT）、水産局（DOF）がマレーシア水産養殖認証スキーマを認証している。
保健省が食品衛生、表示、分析機関、食品基準の管理を行い、食品法に基づいて食品企業の登録と検査を行っており、GMP ガイドラインを設定を計画している。HACCP プログラムは、貿易省、国内貿易消費省、中小企業開発協会によって支援されている。
農業局は、マレーシアの有機基準ガイドラインを農産物の生産と加工のために設定した。

５．欧米における食品の基準・認証システム
グローバルフードセイフティイニシアティブ（GFS）は、ヨーロッパの小売業及びそのサプライヤーのネットワークである CIES によって設立され、消費者保護と信頼確保のために食品安全の観点から、食品安全マネジメント基準を評価している。
GFS により評価されているものを含め、タイを初め多くのアジアの企業が取得している欧米の食品安全マネジメントシステムについて、説明する。
1) BRC グローバルスタンダード（食品）
2) Dutch HACCP
3) EFSIS 基準
6．日本における食品の基準・認証システム
日本における食品の基準・認証システムは、中央政府、地方自治体、民間のそれぞれのレベルで以下のものがある。

中央政府：JAS 有機の認定、肉及び農産物の生産情報公開 JAS、GAP レベル、
食品衛生管理製造過程 (HACCP）など

地方自治体：特別栽培農産物の認証、県によるブランド認証、自主管理 HACCP など

民間レベル：小売業者による PB 商品認証、農家による直販、JAS 有機認証など

7．ベトナムにおける食品の基準・認証システム改善のプロジェクト提案

フードチェーンにおける認証システム

日本では、食品における法規制とそれに伴うガイドラインに基づいて、食品の製造から流通、販売にいたる段階に応じて、認証システムがある。認証システムを成り立たせるためには、それらを支える技術やシステムが必要となり、それがプロジェクト提案のヒントになる。

日本におけるフードチェーンの認証システム

![フードチェーンの認証システム図](image-url)
食品の認証と消費者からの信頼性確保との関連

次頁の図は、日本、タイ、ベトナムを例とした食品認証レベルと信頼度マッピングを示す。タイは、食品の輸出国であることから国際市場での消費者の信頼性向上のための顧客要求を満たすために多くの海外の第三者認証を受けているが、国としてもそれらと相互認証される認証システムの確立を図っている。日本は、消費者の信頼を向上させるために小売業の PB 商品にトレーサビリティを加えてシステムの確立を目指している。ベトナムでは、クリーン野菜プロジェクトなどを実施しているが、オーストラリアの支援によるドラゴンフルーツの GAP プロジェクトが始まるなど、これからの取組となる。

技術協力プロジェクトのコンセプト

ベトナムにおける食品の保証システムを確立するために、下図の「食品の認証強化プログラム」を提案する。そのコンポーネントは以下のとおり。

1) 野菜・果物の食品安全のための適正農業規範（GAP）の強化
2) 農産物認証システムにおける認定機能の強化
3) 食品安全システムにおける農業情報システムの確立
食品の認証システムを確立するためには、次のようなステップが必要となる。以下にそれぞれのステップとプロジェクトとの関係を示す。

1. 政府が農業適正規範（GAP）ガイドラインを開発する（プロジェクト1）
2. GAP ガイドラインに基づいて、植物保護局（PPD）と南方果樹研究所（SOFRI）が農業普及員のために GAP マニュアルを開発する（プロジェクト1）
3. モデル農家に GAP が普及者によって上記 GAP マニュアルによって実施される（プロジェクト1）
4. 農業局（DOA）の認定能力が強化され、植物保護局（PPD）の認証能力が強化される（プロジェクト2）
5. GAP の支援システムとして農業情報システムが構築され、DOA からその情報が公開される。必要な情報は、特に輸入国の食品安全に関する規制や法規である。

また、プロジェクトの実施にあたって、各事前調査や準備がベトナム側及び日本側で必要となる。

1. ベトナムでの実施機関
科学技術省の STAMEQ がベトナムにおける認定の責任機関であり、ISO9000 などの品質マネジメントシステムにおいて多くの知識や経験を有する。しかし、GAP を実施するためには、マネジメントシステムだけではなく、農業についての知識や経験が必要であり、農業農村開発省が主体となって科学技術省からの支援を受けて行うことを勧める。よって、両省の実施機関としての事前の合意が必要となる。

2. バイロットエリアと対象作物
技術協力プロジェクトにおいて、バイロット事業を行う地域と対象作物の選定が重要になる。JICA などの事前調査では、事業の目的はもとよりバイロット地域や対象作物の選定を事前に十分考慮する必要がある。

3. 日本の支援機関
日本では、農水省が食品安全 GAP ガイドラインを作成し、政府によって GAP の促進がなされている。但し、実施にあたっては、民間や自治体などが独自に行っているところもあるため、支援機関については十分に考慮する必要がある。
次頁にベトナムにおける食品認証強化プログラムを実施するための、技術協力候補プロジェクトの一覧を示す。
<table>
<thead>
<tr>
<th>ベトナムにおける食品認証強化プログラム 技術協力候補プロジェクト</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>プロジェクト名</strong></td>
</tr>
<tr>
<td>野菜・果物の食品安全のための適正農業規範（ISO強化）</td>
</tr>
</tbody>
</table>

| 実施機関 | 農業農村開発省（LAICOの植物保護局（LAICOの果物研究所（パートナート協会とも連携）） | 農業農村開発省（LAICOの農業局（LAICO） | 農業農村開発省（LAICOの農業局（LAICO） |
| 対象地域 | ダラット市 | ハノイ周辺 | ハノイ |
| 期間 | 1年間 | 1年間 | 1年間 |
| 最終目標 | 農家が食品安全のための適正農業規範（ISO）を理解するようになる | 農業生産システムの認証におけるISOの認定能力が国際的に認められる、ISOによる生産システムが向上し、輸出が促進される | 国内外の消費者に農業の市場要求やISOの実施が認識され、受け入れられる |
| プロジェクト目標 | ISOのような農産物製造基準に基づく栽培システムが改善され、食品安全に関係する管理技術が農業普及の研修を通じて、強化される。 | 農業農村開発省（LAICO）に認定機能が設置され、科学技術省の基準自則（ISO）と連携して、そのレベルが国際的に認められる。 | 国際基準としてのコーデックスのような食品安全システムや輸入国の基準や規則などの農業に関係情報のデータベースへのアクセスが可能になる |
| アウトプット | *環境の作物に対してISOマニュアルが開発される　*農業普及のためのISO研修マニュアルが開発される　*農家における品質保証のためのISO管理方法が開発される　| *認定に必要なISOの認定能力が開発される　*情報公開及び研修システムが確立される　*食品と食品安全のための情報センターがISOに構築される　*情報構築及び公開に必要な人材資源が開発される　| *食品と食品安全のための情報センターがISOに構築される　*情報構築及び公開に必要な人材資源が開発される |
| 活動 | *ダラットにおける対象作物選別のためISOシステムのベースライン調査実施　*農業普及を前提にISOマニュアルによる研修が行われる　*調査地域における、いつらの農民グループへのモデル事業が実施される　*当該期間においてISO導入の評価がなされる　 | *認定における国際的ガイドラインや基準のレビュー　*ベトナムにおけるISOガイドラインが開発される　*ISOの認証機関における研修プログラムが開発される　 | *人手可能な情報と資料を分類して収集する　*データベースの設計とウェブサイトの開発　*データベースの維持管理システムの開発　*データベースの開発と維持管理のための技術者トレーニング　*情報システムの活用についてのセミナー実施 |
| 日本からの投入 | 長期専門家：著正農業生産、農業普及　短期派遣専門家：ISO認証プログラム作成、生産研修 | 長期専門家：認定マネジメント　短期専門家：ISO認証、有機農業専門家、　プロジェクト評価 | 長期専門家：食品安全情報管理、データベース管理　短期専門家：データベース管理研修 |
| 期待される成果 | *農家の能力向上（品質、生産性向上）　*食品知識工事 Seederが安全な農作物を調査できる　*農家の食品安全と環境配慮についての意識が向上する | *ISOの認定能力が向上し、国際的に認められる　*ISOのような農業生産システム認証が強化される　 | *情報システム開発のためのISOの認定関係　*食品事業者がISOのデータベースの活用が可能になる　*
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